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CATALOGUE

OF THE

LEPIDOPTERA PHALÆNÆ

IN THE

BRITISH MUSEUM.

VOLUME VIII.

LONDON:
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1909.

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CATALOGUE

OF THE

NOCTUIDÆ

IN THE

COLLECTION

OF THE

BRITISH MUSEUM.

BY

SIR GEORGE F. HAMPSON, BART.

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BRITISH MUSEUM (NATURAL HISTORY), CROMWELL ROAD, S.W.

1909.

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RED LION COURT, FLEET STREET.

PREFACE.

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The subject of Vol. VIII. of the 'Catalogue of Moths' is the second part of the Noctuid subfamily *Acronyctinæ*; it contains 720 species belonging to 104 genera as compared with 843 species belonging to 96 genera in Vol. VII., leaving 171 genera to be dealt with in the third and final part of the subfamily, which it is hoped will appear before the end of the current year.

Sir George Hampson desires to thank all those who helped him with the earlier volumes of the Catalogue for their assistance in the preparation of the present volume.

SIDNEY F. HARMER,
Keeper of Zoology.

British Museum (Natural History),
March 18th, 1909.

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CATALOGUE

OF

LEPIDOPTERA PHALÆNÆ.

Family NOCTUIDÆ.

Subfamily ACRONYCTINÆ (*continued*).

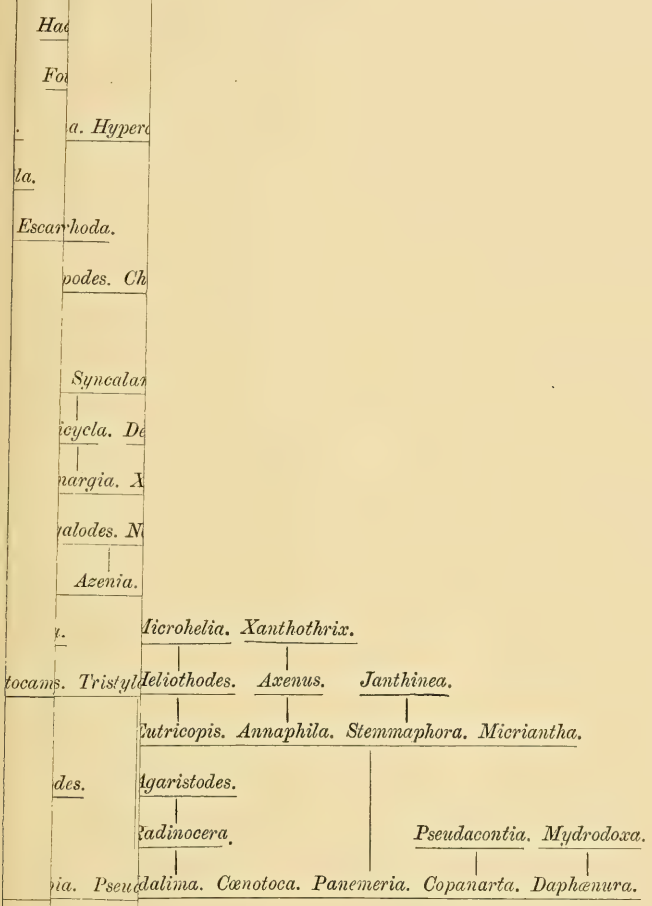
The key to the Genera is reprinted, with some additions and corrections, from Vol. VII. of the Catalogue, with the references to the pages of the present volume inserted with the figure (2) before them.

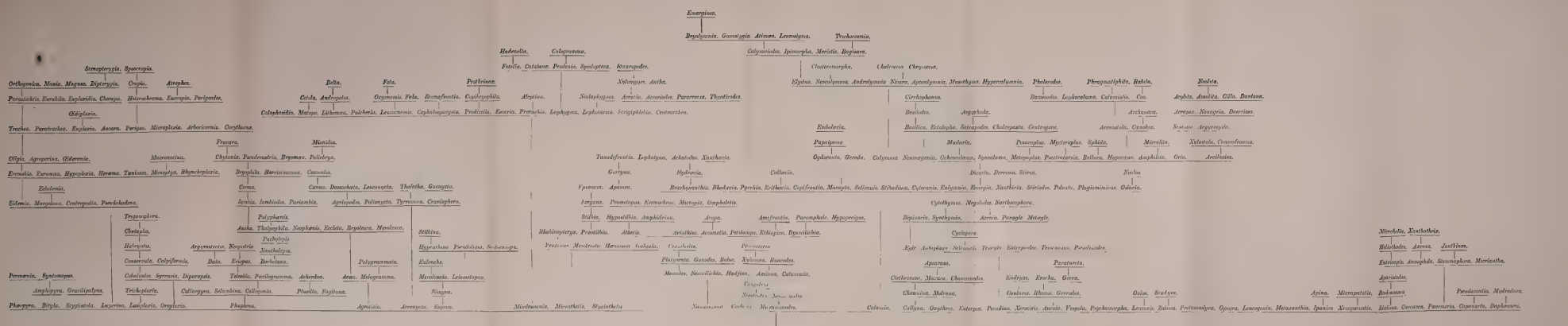
Key to the Genera.

A. Fore wing without an areole.
  a. Fore wing with vein 7 stalked with 8, 9.
    a^1. Fore wing with vein 10 stalked with 8, 9, or 9 absent.
      a^2. Frons with pointed corneous process ..... PACHYLEPIS, p. .
      b^2. Frons with rounded prominence with raised edges.
        a^3. Proboscis absent; hind wing with vein 8 anastomosing with the cell to middle, then approximated to it to extremity ... STOMAFRONTIA, (2) p. 223.
        b^3. Proboscis fully developed.
          a^4. Hind wing with vein 8 approximated to the cell to middle ..... [(2) p. 224. CEPHALOSPARGETA,
          b^4. Hind wing with vein 8 anastomosing with the cell near base only ..... PROMETOPUS, (2) p. 367.
      c^2. Frons with slight rounded prominence.
        a^3. Abdomen with dorsal crest at base ..... EMARGINEA, p. .
        b^3. Abdomen without crests ..... MICRAPATETIS, p. .
      d^2. Frons without prominence.
        a^3. Abdomen with dorsal series of crests.
          a^4. Fore wing with the termen angled at middle ..... NEOPISTRIA, p. 530.
          b^4. Fore wing with the termen evenly curved.
            a^5. Fore wing with vein 9 absent ..... CINGALESA, (2) p. 561.
            b^5. Fore wing with vein 9 present ..... ARBORICORNIS, p. 358.
        b^3. Abdomen without crests.
          a^4. Fore wing with vein 9 absent; metathorax with paired crests ..... NEOLAPHYGMA, (2) p. 266.
          b^4. Fore wing with vein 9 present.
            a^5. Proboscis aborted, small ..... NEOLITA, p. .

b^5. Proboscis fully developed.
a^6. Metathorax with spreading crest ..... NEOSTROTIA, (2) p. 562.
b^6. Metathorax without crest.
a^7. Tarsi with the 1st joint tufted with scales ..... LOPHOTARSIA, (2) p. 268.
b^7. Tarsi with the 1st joint not tufted with scales ..... CLOSTEROMORPHA, p. .
b^1. Fore wing with vein 10 from the cell.
a^2. Abdomen with dorsal series of crests.
a^3. Pro- and metathorax with spreading crests.
a^4. Proboscis aborted, minute ..... NEOMONODES, (2) p. 564.
b^4. Proboscis fully developed ..... FRACARA, p. 600.
b^3. Thorax without crests ..... CHASMINODES, p. .
b^2. Abdomen with dorsal crest at base only.
a^3. Fore wing with the termen angled at vein 4. GONOSTYGIA, p. .
b^3. Fore wing with the termen strongly excurved at middle ..... NEOCALYMNIA, p. .
c^2. Abdomen without crests.
a^3. Frons with rounded prominence ..... XENOPSEUSTIS, p. .
b^3. Frons without prominence ..... MICROMONODES, (2) p. 565.
b. Fore wing with veins 8, 9, 10 stalked, 7 from cell.
a^1. Eyes small, reniform.
a^2. Frons with trilobate process ..... JANTHINEA, p. .
b^2. Frons with rounded prominence with raised edges and central process.
a^3. Palpi upturned ..... MICRIANTHA, p. .
b^3. Palpi porrect ..... APAUSTIS, p. .
b^1. Eyes large, round.
a^2. Frons with transverse corneous plate ..... XANTHOLEPIS, p. .
b^2. Frons smooth.
a^3. Fore wing with the termen angled at vein 4. LEUCOSIGMA, p. .
b^3. Fore wing with the termen not angled at vein 4 ..... BORBOTANA, p. 584.
c. Fore wing with veins 8, 9 stalked, 7 and 10 from cell.
a^1. Frons with bifid corneous plate from middle; abdomen without crests ..... EUTERPIODES, p. .
b^1. Frons with rounded prominence; abdomen with dorsal crests on basal segments ..... MUSOTHYMA, p. .
B. Fore wing with areole.
a. Fore tibia with one or more claws on outer side.
a^1. Frons with heart-shaped corneous prominence ..... POLENTA, p. .
b^1. Frons with trilobate process ..... NARTHECOPHORA, p. .
c^1. Frons smooth ..... CENTROPODIA, p. 452.
b. Fore tibia with small claws at inner and outer sides; frons with pointed prominence connected by a keel with the trilobate plate below it which is produced to lateral points below. PARÆGLE, p. .
c. Fore tibia with large semilunar plate at extremity, and large and small claws on inner side ..... TRIOCNEMIS, p. .
d. Fore tibia with long curved claw on inner side and two claws on outer ..... DERRIMA, p. .
e. Fore tibia with long curved claw on inner side and small claw on outer.
a^1. Frons with truncate prominence with raised edges ..... PLAGIOMIMICUS, p. .
b^1. Frons smooth, with corneous plate below it. PSEUDACONTIA, p. .
f. Fore tibia with claw on inner side only.
a^1. Frons with shovel-shaped plate at middle and corneous plate below it ..... PINACOPLUS, p. .
b^1. Frons with pointed prominence with trilobate plate below it ..... METÆGLE, p.

[*To face* p. 2.


Hac
Fo
a. Hyperc
la.
Escarrhoda.
podes. Ch
Syncalax
icycla. De
nargia. X
ralodes. N
Azenia.
Microhelia. Xanthothrix.
tocams. Tristyl Heliothodes. Axenus. Janthinea.
Eutricopis. Annaphila. Stemmaphora. Micriantha.
des.
Agaristodes.
Radinocera.
Pseudacontia. Mydrodoxa.
ia. Pseud Adalima. Cœnotoca. Panemeria. Copanarta. Daphænura.


Eucarina.
Dryobyinia. Goosiopia. Ariamn. Leucogma. Trichocosmia.
Hadenella. Colocrania.
Calyptoides. Ipimorpha. Meristis. Bagisara.
Simoptrynyia. Spaeropia.
Fodella. Catalaea. Prodenia. Spodoptera. Stenopodes.
Clostermorpha. Chaleoera Chrysocera.
Orthogonia. Mania. Magnus. Digtoryyia. Oxyia. Atrophes.
Delta. Fota. Prothrinax.
Hydna. Nesculymna. Andralymnia Nicara. Apteolymnia. Maethyna. Hypercalymnia.
Phalesides. Phragmatiphila. Rubida. Rosbita.
Perasiclekia. Eurubida. Euplexidia. Clarupa. Heterochroma. Eucropia. Perigeodes.
Cotula. Andropota. Oxycnemis. Fota. Stenafrontia. Cupilorophila. Atrpiva. Nolaphygma. Aericia. Acroricides. Pararcusa. Thantiodes.
Cirrhophanus. Ramisodes. Lophocalama. Calamistis. Cos. Arphis. Anubita. Cilla. Dantona.
Œdipteria.
Catephanitis. Maiopa. Lithomoia. Pulcheria. Leucomonia. Cephalosporgia. Prodiscila. Eucaria. Pranachia. Lophogma. Lophotarsa. Strigiphelia. Centrarthra.
Basilodes. Argyrhoda. Archanara. Acronyx. Nonagria. Dorcinea.
Trachea. Pantrachea. Euplexia. Anoura. Perigea. Microplexia. Arboricornia. Corythurna.
Endoreia. Basilica. Eriolopha. Satrapodes. Chalcopasta. Centrogona. Arenostola. Caradrina. Senta. Aggrapopla.
Frocara. Manides. Papaipema. Madaria. Pomeroplus. Mysteroplus. Sphida. Mierelita. Xylostola. Conicrostea.
Oligia. Agrosperina. Œdermia. Macronoctua. Chytonix. Pseudorastria. Bryomoa. Polinbrya. Opdoconta. Gerodia. Calpousia. Neumogenia. Ochrocolaena. Synealama. Metapoplus. Pacetmiaria. Bellura. Hupoceas. Amphiate. Oria. Arcibiana.
Tanaulrontia. Lophotyna. Achatodes. Xanthocia.
Evemelia. Eurenaea. Hypoplasia. Hevena. Tambina. Monoptya. Rhynchoplexia. Brophila. Harvisimmona. Caiwodes. Gortyna. Hydrocia. Callocia. Dicycla. Derrima. Stirva. Nocha.
Fyamosa. Apamea. Brachyxanthia. Rhoberia. Pyrrhia. Erithacia. Cuphfrontia. Mucapta. Selinaia. Sthoatiana. Cyleoenis. Eulyania. Energia. Xanthiria. Stiriodes. Polesia. Plagiomimicus. Oditis.
Zebelemia.
Edemia. Morpheua. Centropodia. Pseudohadena. Cerna. Dasochaeta. Leucocneta. Thalatta. Gocneyia. Jamia. Iambiodes. Puriambia. Agriopodes. Poliomyeta. Tycracona. Craniophora. Fyrgena. Prometopus. Eremarbora. Mucopia. Omphaletis. Cytothymus. Megalodes. Barthecophora.
Trigonophora. Polyphanta. Stilbia. Hypostilbia. Amphidrina. Aropa. Amefrontia. Paromphale. Hypoperigea. Dipisocia. Synthymia. Acronia. Paragia Metagia.
Chelepha. Ancha. Thalpophila. Neophasia. Ecclata. Bryolenca. Merolenca. Stilbina. Ithabinopteryx. Prosthithia. Atheta. Aristhisia. Acontella. Patdampa. Ethiplan. Dyanilichia. Cyclopera.
Helcystis. Fuchsiopsis. Hyspathana Parabolina. Sedenopa. Prodenia. Mesdenia. Hermonca. Galgula. Crinodeles. Procuceras. Xylé. Autophana. Selenastis. Teravila. Enterpodes. Proxenaus. Pseudocnoles. Hiroclida. Xanthothoe.
Argyrostrotis. Neuptria. Xanthodrya. Helicodes. Arrost. Janthinea.
Conservula. Calpiformis. Dida. Eriopus. Barbetana. Polygrammata. Eulmeke. Platysenta. Gonodes. Holea. Xylenana. Hoarodes. Aparasca. Paraturcta. Entricopis. Anaphida. Stenophora. Meriastha.
Cobelisides. Syrrusia. Diparopsis. Talasila. Pantlogramma. Acherdoa. Arca. Meliogramma. Merolencke. Lelonotopsa. Clethrocnus. Maxiva. Chasmoides. Eudryas. Eroska. Gerra. Apriatola.
Perasenia. Syntomopus. Amphipyra. Gravilipalpus. Trichopleria. Callamyra. Selambina. Calliopsis. Phaella. Fagitana. Sinyra. Chasmina. Medosa. Gaulura. Rhesus. Gerrodes. Ocles. Scudyra. Apina. Micropatelia. Robinsona. Pseudaconita. Mydrodoca.
Phæpyra. Bityla. Stygiatola. Lagerina. Lamperia. Oreopleria. Phabena. Agnesia. Acronycta. Euprya. Miselraconia. Micrathetis. Stycinthetis. Nacoxia. Cobresia. Mycronoctua. Calesia. Cullyna. Oxythres. Enterpia. Parodina. Xeracles. Ancicla. Vespula. Psychonompha. Leucania. Zadima. Protenodyra. Opsyra. Leucogonia. Metaxanthia. Ipsilon. Xenopanistis. Heliaca. Carnifica. Pamneria. Cirpenaria. Diphthera.
Hyppocalamia.

c^1. Frons with corneous prominence with raised edges and central process.
  a^2. Proboscis aborted ..... CENTROGONE, p. .
  b^2. Proboscis fully developed.
    a^3. Eyes small, reniform ..... XANTHOTHRIX, p. .
    b^3. Eyes large, round.
      a^4. Thorax clothed with rough scales; pro- and metathorax with crests; patagia curled upwards at extremity ..... CHALCOPASTA, p. .
      b^4. Thorax smoothly clothed with scales.
        a^5. Pro- and metathorax with slight crests. FOTA, (2) p. 214.
        b^5. Pro- and metathorax without crests ... ANTAPLAGA, p. .
      c^4. Thorax clothed with hair and hair-like scales ..... CALOPHASIDIA, (2) p. 181.
      d^4. Thorax clothed with hair only, the pro- and metathorax with spreading crests... FALA, (2) p. 220.
d^1. Frons with corneous prominence with raised edges, its lower edge produced to a point.
  a^2. Fore wing with the apex produced and acute. STIRIA, p. .
  b^2. Fore wing with the apex round ..... CIRRHOPHANUS, p. .
e^1. Frons with corneous prominence with raised edges not produced to a point.
  a^2. Proboscis aborted, minute ..... METOPOPLUS, p.
  b^2. Proboscis fully developed.
    a^3. Fore wing with the termen excurved at middle and oblique towards tornus ..... BASILODES, p. .
    b^3. Fore wing with the termen evenly curved. STIBADIUM, p. .
f^1. Frons with rounded prominence with corneous plate below it ..... XANTHIRIA, p. .
g^1. Frons without prominence.
  a^2. Proboscis aborted, small.
    a^3. Pro-and metathorax with spreading crests. PSEUDOLIGIA, (2) p. 170.
    b^3. Prothorax without crest, metathorax with large crest ..... OXYCNEMIS, (2) p. 215.
  b^2. Proboscis fully developed.
    a^3. Thorax smoothly clothed with scales.
      a^4. Pro- and metathorax with spreading crests ..... COPANARTA, p. .
      b^4. Thorax without crests ..... LEUCOCNEMIS, (2) p. 221.
    b^3. Thorax roughly clothed with hair and hair-like scales ..... CENTRARTHRA, (2) p. 284.
g. Fore tibia without claws.
  a^1. Fore tarsus with curved claw-like spines on outer side of 1st joint.
    a^2. Frons with truncate conical prominence with raised edges.
      a^3. Proboscis aborted, small; abdomen with dorsal crest at base only ..... MYCTEROPLUS, p. .
      b^3. Proboscis fully developed; abdomen without crests.
        a^4. Thorax clothed chiefly with scales, the metathorax with paired crests ..... OMPHALETIS, (2) p. 374.
        b^4. Thorax clothed with hair only and without crests ..... PSECTROTARSIA, p. .
    b^2. Frons with rounded prominence with corneous plate below it; proboscis aborted... MICROPIA, (2) p. 373.
    c^2. Frons with vertical ridge.
      a^3. Abdomen with dorsal crest at base only... CALLARGYRA, p. 515.
      b^3. Abdomen without crests ..... SCOTOCAMPA, (2) p. 171.
    d^2. Frons without prominence.
      a^3. Prothorax with sharp ridge-like crest, metathorax with spreading crest; abdomen with basal crest ..... RHODŒCIA, p. .

b^3. Pro- and metathorax with spreading crests; abdomen without crests ..... PSEUDOHADENA, p. 454.
b^1. Fore tarsus without claw-like spines on outer side of 1st joint.
a^2. Frons with truncate corneous prominence with raised edges, its lower edges produced to a trilobate plate with corneous plate below it.
a^3. Thorax clothed chiefly with scales ..... CYTOTHYMIA, p. .
b^3. Thorax clothed with rough hair and hair-like scales ..... MEGALODES, p. .
b^2. Frons with long trilobate process and corneous plate below it.
a^3. Proboscis aborted, small.
a^4. Palpi oblique, reaching to beyond frons . AZENIA, p. .
b^4. Palpi porrect, very short ..... PSEUDINODES, p. .
b^3. Proboscis fully developed.
a^4. Eyes small, reniform ..... STEMMAPHORA, p. .
b^4. Eyes large, round.
a^5. Palpi extending to just beyond frons.
a^6. Metathorax with spreading crests ... TRISTYLA, p. .
b^6. Thorax without crests ..... MUDARIA, p. .
b^5. Palpi very short and not reaching as far as frons ..... SYNTHYMIA, p. .
c^1. Frons with long bilobate corneous process.
a^3. Proboscis aborted, small.
a^4. Frons with long triangular plate below it. PROTHRINAX, (2) p. 225.
b^4. Frons with short plate below it excised in front.
a^5. Thorax clothed with hair and scales, the pro- and metathorax with spreading crests ..... STILBINA, (2) p. 168.
b^5. Thorax clothed almost entirely with scales and without crests ..... CYCLOPERA, p. .
c^5. Thorax clothed with hair and hair-like scales and without crests ..... OCHROCALAMA, p. .
c^4. Frons without plate below it ..... ARCHANARA, p. .
b^3. Proboscis fully developed.
a^4. Metathorax with spreading crest ..... DIPINACIA, p.
b^4. Metathorax without crest ..... ÆGLE, p. .
d^2. Frons with rounded prominence with shovel-shaped process at middle and corneous plate below it.
a^3. Proboscis absent ..... HYPEUTHINA, (2) p. 169.
b^3. Proboscis aborted, small.
a^4. Frons with the corneous process somewhat pointed at extremity and keeled below ..... DIPAROPSIS, p. 509.
b^4. Frons with the corneous process not pointed or keeled.
a^5. Palpi upturned ..... AMEFRONTIA, (2) p. 417.
b^5. Palpi obliquely porrect ..... STIRIODES, p. .
c^3. Proboscis fully developed.
a^4. Eyes small, reniform ..... APINA, p. .
b^4. Eyes large, round.
a^5. Thorax clothed chiefly with scales.
a^6. Frons with trilobate plate below it; hind wing with veins 3, 4 from cell... COPIBRYOPHILA, (2) p. 226.
b^6. Frons with triangular plate below it; hind wing with veins 3, 4 stalked ... PRODICELLA, (2) p. 227.
c^6. Frons with the corneous plate below it excised in front; hind wing with vein 5 from well below middle of cell. ALEPTINA, (2) p. 229.
b^5. Thorax clothed with hair only ..... IPANICA, p. .

e^2. Frons with truncate conical prominence with raised edges.
a^3. Abdomen with dorsal crests on basal segments.
a^4. Proboscis aborted, minute.
a^5. Fore wing with the termen and cilia strongly dentate ..... CETOLA, (2) p. 182.
b^5. Fore wing with the termen and cilia slightly crenulate..... ATREPHES, p. 284.
b^4. Proboscis fully developed.
a^5. Thorax with slight double ridge-like crest ..... STAUROPIDES, (2) p. 269.
b^5. Pro- and metathorax with spreading crests ..... SPEOCROPIA, p. 255.
c^5. Prothorax without crest, metathorax with large spreading crest ..... EUDRYAS, p. .
d^5. Thorax without crests.
a^6. Thorax clothed with rough hair and scales mixed ..... PARATUERTA, p.
b^6. Thorax clothed with hair and hair-like scales.
a^7. Palpi upturned ..... SEUDYRA, p. .
b^7. Palpi porrect ..... GERRA, p. .
b^3. Abdomen with dorsal crest at base only.
a^4. Prothorax with spreading crest.
a^5. Frons with flattened vertical process to the frontal prominence ..... RUACODES, (2) p. 537.
b^5. Frons with long central process hollowed out in front to the frontal prominence.
a^6. Proboscis aborted, minute ..... SYNCALAMA, p. .
b^6. Proboscis fully developed ..... HADENELLA, (2) p. 231.
c^5. Frons without central process to the frontal prominence.
a^6. Proboscis aborted ..... ECBOLEMIA, p. 448.
b^6. Proboscis fully developed.
a^7. Hind wing with vein 5 from middle of discocellulars ..... CATAMECIA, (2) p. 540.
b^7. Hind wing with vein 5 from below middle of discocellulars.
a^8. Frontal prominence large ..... PROCRATERIA, (2) p. 533.
b^8. Frontal prominence small ..... HYPOPERIGEA, (2) p. 422.
b^4. Prothorax without crest.
a^5. Frons with truncate process in middle of prominence ..... NOCLOA, p. .
b^5. Frons without truncate process in middle of prominence.
a^6. Proboscis aborted, small ..... OSLARIA, p. .
b^6. Proboscis fully developed.
a^7. Frontal prominence large.
a^8. Palpi upturned.
a^9. Mesothorax with paired crests ... IAMBIODES, p. 659.
b^9. Mesothorax without crest ..... APOCALYMNIA, p. .
b^8. Palpi porrect.
a^9. Eyes small, reniform ..... AGARISTODES, p. .
b^9. Eyes large, round.
a^{10}. Thorax clothed with hair and scales mixed.
a^{11}. Patagia fringed with long rough hair and scales ..... OVIOS, p. .
b^{11}. Patagia normal.
a^{12}. Abdomen with fan-like crest formed of scales ..... RADINOCERA, p.
b^{12}. Abdomen with tufted crest formed of hairs ..... EROCHA, p. .

b^{10}. Thorax clothed with hair only.
a^{11}. Patagia with the extremities turned upwards, the metathorax with paired crests ..... GERRODES, p. .
b^{11}. Patagia normal ..... CAULARIS, p. .
b^7. Frontal prominence very small.
a^8. Palpi upturned ..... THALATHA, (2) p. 42.
b^8. Palpi porrect, the 3rd joint downturned and dilated at extremity ... LEUCOGONIA, p. .
c^3. Abdomen without dorsal crests.
a^4. Eyes small, reniform.
a^5. Frontal prominence with its lower edge produced to a corneous plate ..... AXENUS, p. .
b^5. Frontal prominence with its lower edge not produced to a corneous plate.
a^6. Frontal prominence with central process ..... MICROHELIA, p. .
b^6. Frontal prominence without central process ..... HELIOTHODES, p. .
b^4. Eyes large, round.
a^5. Frons with beak-shaped process from lower edge of prominence ..... CYTOCANIS, p. .
b^5. Frons with flattened plate from lower edge of prominence, grooved in front. CALLŒCIA, p. .
c^5. Frons with wedge-shaped process in middle of prominence ..... BASILICA, p. .
d^5. Frons with rounded truncate process in middle of prominence ..... SELENISTIS, p. .
e^5. Frons with vertical ridge in middle of prominence ..... ARGYRHODA, p. .
f^5. Frons without process in middle of prominence.
a^6. Frontal prominence long.
a^7. Thorax clothed with hair and scales mixed; abdomen smoothly scaled.
a^8. Palpi upturned, the 3rd joint porrect. IDALIMA, p. .
b^8. Palpi porrect.
a^9. Proboscis absent.
a^{10}. Prothorax with spreading crest . RABILA, p. .
b^{10}. Prothorax without crest ..... EREMOCHROA, (2) p. 370.
b^9. Proboscis aborted, minute; frontal prominence indented below ..... ESCARIA, (2) p. 228.
c^9. Proboscis fully developed.
a^{10}. Frons with pointed corneous plate below it ..... MOLYENA, p. .
b^{10}. Frons without corneous plate below it ..... RHOSUS, p. .
b^7. Thorax clothed with hair only; abdomen clothed with rough hair.
a^8. Palpi upturned ..... AUCULA, p. .
b^8. Palpi porrect ..... LEUCOVIS, p. .
b^6. Frontal prominence short.
a^7. Thorax with broad dorsal ridge of scales.
a^8. Frons with the corneous prominence large..... PARACROBIA, (2) p. 281.
b^8. Frons with the corneous prominence small ..... THYATIRODES, (2) p. 282.
b^7. Pro- and metathorax with spreading crests..... HYPERCALYMNIA, p. .
c^7. Metathorax with depressed crest; hind wing with veins 3, 4 stalked ... PAROMPHALE, (2) p. 421.
d^7. Thorax without crests.
a^8. Palpi with the 2nd joint reaching vertex of head; thorax clothed with hair and hair-like scales ..... STYGIATHETIS, (2) p. 444.

b^8. Palpi with the 2nd joint reaching middle of frons; thorax clothed with hair and scales mixed.
a^9. Palpi upturned, slender; fore wing with the termen excurved at middle and oblique towards tornus ..... SATRAPODES, p. .
b^9. Palpi oblique, short; fore wing with the termen evenly curved ... DYSMILICHIA, (2) p. 426.
f^2. Frons with pointed prominence.
a^3. Eyes small, reniform ..... PSYCHOMORPHA, p. .
b^3. Eyes large, round.
a^4. Abdomen with dorsal crests on basal segments.
a^5. Proboscis aborted, minute ..... ACHATODES, p. .
b^5. Proboscis fully developed ..... CŒNOTOCA, p. .
b^4. Abdomen with dorsal crest at base only.
a^5. Prothorax with sharp triangular ridge-like crest, the metathorax with divided crest ..... XANTHŒCIA, p. .
b^5. Prothorax with divided crest, metathorax with spreading crest ..... XEROCIRIS, p. .
c^5. Thorax without crests.
a^6. Frons with beak-like pointed process; palpi with the 2nd joint very broadly scaled ..... APSARASA, p. .
b^6. Frons with slight pointed prominence; palpi slender.
a^7. Palpi upturned ..... MAZUCA, p. .
b^7. Palpi porrect ..... PROTOSEUDYRA, p. .
c^4. Abdomen without crests.
a^5. Proboscis aborted, minute ..... CONICOFRONTIA, p. .
b^5. Proboscis fully developed.
a^6. Thorax clothed almost entirely with scales ..... MICROLITA, p. .
b^6. Thorax clothed with hair and hair-like scales ..... CŒNOBIA, p. .
g^2. Frons with rounded prominence with transverse corneous plate at middle square in front ..... PHRAGMATIPHILA, p. .
h^2. Frons with rounded prominence with vertical ridge at middle.
a^3. Abdomen with dorsal series of crests ..... EUCROPIA, p. 286.
b^3. Abdomen with dorsal crest at base only.
a^4. Palpi upturned ..... PARIAMBIA, p. 660.
b^4. Palpi porrect ..... METAXANTHIA, p. .
c^3. Abdomen without crests ..... CHRYSOECIA, p.
i^2. Frons with rounded prominence with slight transverse ridge.
a^3. Frons with corneous plate below it.
a^4. Abdomen with dorsal crests on first two segments ..... CHALCOECIA, p. .
b^4. Abdomen without crests ..... PRORACHIA, (2) p. 230.
b^3. Frons without corneous plate below it ... ŒDIPLEXIA, p. 218.
j^2. Frons with rounded prominence.
a^3. Abdomen with dorsal crests on basal segments.
a^4. Proboscis absent.
a^5. Pro- and metathorax with spreading crests ..... TUMIDIFRONTIA, p. .
b^5. Pro- and metathorax without crests ... MIONIDES, p. 616.
b^4. Proboscis fully developed.
a^5. Pro- and metathorax with spreading crests ..... ŒDEREMIA, p. 405.
b^5. Pro- and metathorax without crests.
a^6. Thorax smoothly clothed with scales only ..... GOENYCTA, (2) p. 49.

b^6. Thorax clothed with rough hair and scales mixed ..... ZALISSA, p.
b^3. Abdomen with dorsal crest at base only.
a^4. Prothorax with spreading crest.
a^5. Fore wing with the termen oblique towards tornus.
a^6. Fore wing with scale-tooth at tornus . ECTOLOPHA, p.
b^6. Fore wing without scale-tooth at tornus ..... XYLOMŒA, (2) p. 534.
b^5. Fore wing with the termen evenly curved.
a^6. Build stout.
a^7. Fore wing with the termen crenulate. AMIANA, (2) p. 538.
b^7. Fore wing with the termen not crenulate ..... MATOPO, (2) p. 185.
b^6. Build slender ..... NEOMILICHIA, (2) p. 518.
b^4. Prothorax without crest.
a^5. Thorax clothed chiefly with scales.
a^6. Fore wing with the apex produced, the termen obliquely curved ..... FOTELLA, (2) p. 232.
b^6. Fore wing with the apex not produced, the termen more erect.
a^7. Antennæ laminate, almost simple ... TYCRACONA, (2) p. 50.
b^7. Antennæ ciliated.
a^8. Fore wing narrow, the margins subparallel ..... BRYOLYMNIA, p.
b^8. Fore wing triangular ..... TRICHOCOSMIA p.
b^5. Thorax clothed with hair only ..... ERYTHRŒCIA, p.
c^3. Abdomen without dorsal crests.
a^4. Eyes small, elliptical.
a^5. Thorax clothed with rough hair and scales. ANNAPHILA, p.
b^5. Thorax smoothly scaled ..... MESOTROSTA, (2) p. 437.
b^4. Eyes large, round.
a^5. Metathorax with crest.
a^6. Prothorax with spreading crest.
a^7. Proboscis absent ..... ACOPA, (2) p. 410.
b^7. Proboscis aborted, small ..... HÆMASSIA, (2) p. 438.
c^7. Proboscis fully developed ..... CŒA, p.
b^6. Prothorax without crest.
a^7. Proboscis aborted, minute.
a^8. Thorax clothed with hair and scales mixed ..... LEIOMETOPON, (2) p. 172.
b^8. Thorax clothed with hair only ..... SPHIDA, p.
b^7. Proboscis fully developed..... RHABINOPTERYX, (2) p. 287.
b^5. Metathorax without crest.
a^6. Thorax clothed almost entirely with scales.
a^7. Proboscis aborted ..... MEROLEUCA, p. 687.
b^7. Proboscis fully developed.
a^8. Frons with corneous ridge above ... NEUMŒGENIA, p.
b^8. Frons without corneous ridge above.
a^9. Fore wing with the apex rather produced and acute..... XYLOSTOLA, p.
b^9. Fore wing with the apex rounded. ACOSMETIA, (2) p. 412.
b^6. Thorax clothed with hair and hair-like scales ..... ARCILASISA, p.
c^6. Thorax clothed with hair only..... OXYTHRES, p.
k^2. Frons with vertical flattened process with rounded edge.
a^3. Abdomen with dorsal series of crests..... EMBOLŒCIA, p.
b^3. Abdomen with dorsal crest at base only... COPIFRONTIA, p.
l^2. Frons with transverse ridge.
a^3. Abdomen with dorsal series of crests ..... ANTHA, (2) p. 274.
b^3. Abdomen with dorsal crest at base only.
a^4. Pro- and metathorax with spreading crests ..... LEUCONYCTA, (2) p. 35.
b^4. Pro- and metathorax without crests..... POLYGRAMMATA, p. 689.

m^2. Frons smooth and without prominence.
a^3. Proboscis aborted or absent.
a^4. Abdomen with dorsal series of crests.
a^5. Prothorax without crest, metathorax with spreading crest ..... BRYOMŒA, p. 615.
b^5. Thorax without crests.
a^6. Palpi upturned, thickly scaled ..... ACHERDOA, p. 591.
b^6. Palpi porrect, slender ..... POLIOBRYA, p. 617.
b^4. Abdomen with dorsal crest at base only.
b^5. Thorax clothed almost entirely with scales.
a^6. Prothorax with divided crest ..... PHALERODES, p. .
b^6. Prothorax without crest.
a^7. Palpi with the 2nd joint reaching vertex of head ..... PLUSILLA, p. 590.
b^7. Palpi with the 2nd joint reaching about middle of frons ..... BRYOLEUCA, p. 686.
b^5. Thorax clothed with hair and hair-like scales.
a^6. Pro- and metathorax with spreading crests ..... CALAMISTIS, p. .
b^6. Pro- and metathorax without crests.
a^7. Fore wing very narrow and produced at apex ..... EULONCHE, (2) p. 162.
b^7. Fore wing triangular ..... MEROLONCHE, (2) p. 165.
c^4. Abdomen without crests.
a^5. Thorax clothed chiefly with scales.
a^6. Hind wing with vein 8 anastomosing with the cell to near extremity ..... ACYLITA, p. .
b^6. Hind wing with vein 8 anastomosing with the cell to middle ..... DOERRIESA, p. .
c^6. Hind wing with vein 8 anastomosing with the cell near base only.
a^7. Pro- and metathorax with spreading crests ..... ETHIOPICA, (2) p. 418.
b^7. Pro- and metathorax without crests.
a^8. Palpi with the hair at extremity of 2nd joint produced to a point, the 3rd porrect ..... DANTONA, p. .
b^8. Palpi with the 2nd joint slightly fringed with hair in front.
a^9. Palpi with the 3rd joint porrect ... CILLA, p. .
b^9. Palpi with the 3rd joint upturned. AMOLITA, p. .
b^5. Thorax clothed with hair and hair-like scales.
a^6. Pro- and metathorax with spreading crests.
a^7. Palpi upturned; fore wing with the termen not crenulate.
a^8. Fore wing with the termen oblique towards tornus ..... NONAGRIA, p. .
b^8. Fore wing with the termen evenly curved ..... SELICANIS, p. .
b^7. Palpi porrect; fore wing with the termen crenulate ..... MARGELANA, p. 449.
b^6. Thorax without crests.
a^7. Fore wing with the apex produced and acute; hind wing with veins 3, 4 usually stalked, 5 from below middle of discocellulars ..... ACRAPEX, p. .
b^7. Fore wing with the apex not produced; hind wing with veins 3, 4 from cell, 5 from middle of discocellulars.
a^8. Palpi upturned; frons with large tuft of hair ..... SPHETTA, p. .

b^8. Palpi porrect; frons without tuft of hair .... PETILAMPA, (2) p. 414.
c^5. Thorax clothed with hair only.
a^6. Metathorax with spreading crest ..... BELLURA, p. .
b^6. Thorax without crests.
a^7. Palpi upturned ..... SESAMIA, p. .
b^7. Palpi porrect.
a^8. Fore wing with the apex produced and acute ..... SIMYRA, (2) p. 173.
b^8. Fore wing with the apex rounded... EOGENA, (2) p. 179.
b^3. Proboscis fully developed.
a^4. Abdomen with dorsal series of crests.
a^5. Thorax with double ridge-like crest.
a^6. Thorax clothed chiefly with scales.
a^7. Palpi with the 2nd joint broadly angled with hair in front ..... ORTHOGONICA, p. 45.
b^7. Palpi with the 2nd joint moderately fringed with hair in front.
a^8. Fore wing long and narrow, the termen not excised towards tornus.
a^9. Tegulæ produced at a slight dorsal ridge..... DELTA, (2) p. 190.
b^9. Tegulæ not produced to a dorsal ridge.
a^{10}. Frons tufted with hair.
a^{11}. Fore wing very narrow, the termen very obliquely curved. MAGUSA, p. 55.
b^{11}. Fore wing broader, the termen more erect ..... PARASTICHTIS, p. 76.
b^{10}. Frons smooth with a slight corneous plate below it ..... XYLOMYGES, (2) p. 271.
b^8. Fore wing shorter, the termen excised towards tornus.
a^9. Palpi with the 2nd joint reaching to about vertex of head ..... STENOPTERYGIA, p. 61.
b^9. Palpi with the 2nd joint reaching to about middle of frons.
a^{10}. Frons tufted with hair ..... DIPTERYGIA, p. 64.
b^{10}. Frons smoothly scaled ..... ACRORIA, (2) p. 276.
b^6. Thorax clothed with hair and hair-like scales ..... AGROPERINA, p. 398.
b^5. Thorax with broad ridge-like crest..... EURABILA, p. 109.
c^5. Prothorax with triangular crest.
a^6. Thorax clothed chiefly with scales ... LOPHOTYNA, p. .
b^6. Thorax clothed with hair and hair-like scales .... PULCHERIA, (2) p. 213.
c^6. Thorax clothed with hair only.
a^7. Fore wing with the termen excised below vein 4..... ..... TRIGONOPHORA, p. 486.
b^7. Fore wing with the termen evenly curved.
a^8. Abdomen with the crests mixed with scales ..... CHUTAPHA, p. 491.
b^8. Abdomen with the crests formed of hair only .... HABRYNTIS, p. 498.
d^5. Pro-, meso- and metathorax with large divided crests ..... MANIA, p. 49.
e^5. Pro- and metathorax with divided crests.
a^6. Thorax clothed chiefly with scales.
a^7. Abdomen dorsally flattened ..... CHECUPA, p. 111.
b^7. Abdomen not dorsally flattened.
a^8. Fore wing with vein 5 nearly straight, from just below middle of discocellulars..... EUPLEXIDIA, p. 110.
b^8. Fore wing with vein 5 curved, from just above lower angle of cell ..... TRACHEA, p. 113.

b^6. Thorax clothed with hair and hair-like scales ..... PARATRACHEA, p. 216.
f^5. Prothorax with spreading crest, metathorax with divided crest ..... POLYPHÆNIS, p. 667.
g^5. Prothorax with long oblique flattened crest.
a^6. Metathorax with divided crest ..... PAPAIPEMA, p. .
b^6. Metathorax with spreading crest ..... OGDOCONTA, p. .
h^5. Pro- and metathorax with spreading crests.
a^6. Thorax clothed chiefly with scales.
a^7. Fore wing with slight scale-tooth at tornus.
a^8. Abdomen with long forked crest on 2nd segment ..... ARGYROSTROTIS, p. 517.
b^8. Abdomen without forked crest on 2nd segment.
a^9. Fore wing with the termen more or less angled at vein 4, then oblique ..... ERIOPUS, p. 531.
b^9. Fore wing with the termen angled at vein 3, then dentate ..... COSMODES, (2) p. 17.
c^9. Fore wing with the termen evenly curved, dentate ..... DATA, p. 526.
b^7. Fore wing without scale-tooth at tornus.
a^8. Palpi with the 3rd joint porrect.
a^9. Palpi with the 2nd joint reaching vertex of head, the 3rd long ..... ANCARA, p. 249.
b^9. Palpi with the 2nd joint reaching about middle of frons, the 3rd short.
a^{10}. Abdomen with large dorsal crest on 3rd segment ..... TELESILLA, p. 587.
b^{10}. Abdomen with the dorsal crests slight ..... ANDROPOLIA, (2) p. 199.
b^8. Palpi with the 3rd joint upturned.
a^9. Palpi with the 3rd joint long and dilated at extremity.
a^{10}. Fore wing with the termen excurved at middle and excised towards tornus ..... VESPOLA, p. .
b^{10}. Fore wing with the termen evenly curved ..... CROPIA, p. 260.
b^9. Palpi with the 3rd joint very long, not dilated, in male tufted with long hair on inner side and recurved over head ..... CORYTHURUS, p. 360.
c^9. Palpi with the 3rd joint shorter and not dilated.
a^{10}. Fore wing with the cilia strongly dentate towards tornus ..... PERIGEODES, p. 287.
b^{10}. Fore wing with the cilia slightly crenulate.
a^{11}. Palpi with the 2nd joint reaching vertex of head.
a^{12}. Abdomen with very large crests on 3rd and 4th segments; build slender ..... CHYTONIX, p. 600.
b^{12}. Abdomen with the crests on medial segments equal; build stout.
a^{13}. Thorax and fore wing roughly scaled ..... HETEROCHROMA, p. 271.

b^{13}. Thorax and fore wing smoothly scaled ..... PERIGEA, p. 292.
b^{11}. Palpi with the 2nd joint reaching about middle of frons.
a^{12}. Abdomen with large crest on 3rd segment; build stout ... EUPLEXIA, p. 219.
b^{12}. Abdomen with large crest on 4th segment; build slender... MICROPLEXIA, p. 354.
c^{12}. Abdomen with the crests on medial segments equal.
a^{13}. Fore wing with the apex rectangular and somewhat acute ..... GORTYNA, p. .
b^{13}. Fore wing with the apex rounded ..... OLIGIA, p. 361.
b^{6}. Thorax clothed with hair and hair-like scales.
a^{7}. Prothorax with the crest long, mesothorax with small paired crests; abdomen with very large double crest at base .... ACRORIODES, (2) p. 279.
b^{7}. Abdomen without large double crest at base.
a^{8}. Tegulæ produced to a slight dorsal ridge ..... APAMEA, p. .
b^{8}. Tegulæ not produced to a dorsal ridge.
a^{9}. Thorax quadrately scaled ..... LITHOMŒA, (2) p. 208.
b^{9}. Thorax not quadrately scaled.
a^{10}. Thorax clothed with long rough hair and hair-like scales .... DASEOCHÆTA, (2) p. 22.
b^{10}. Thorax smoothly clothed with hair and hair-like scales..... EREMOBIA, p. 409.
c^{6}. Thorax clothed with hair only ..... TRICHOPLEXIA, p. 482.
i^{5}. Prothorax without distinct crest.
a^{6}. Thorax clothed chiefly with scales.
a^{7}. Palpi with the 2nd joint reaching vertex of head, the 3rd long.
a^{8}. Palpi with the 3rd joint porrect ... PSEUDERASTRIA, p. 614.
b^{8}. Palpi with the 3rd joint upturned... BRYOPHILA, p. 618.
b^{7}. Palpi with the 2nd joint reaching about middle of frons, the 3rd short.
a^{8}. Abdomen with very large crest on 4th segment.
a^{9}. Metathorax with very large crest of long spatulate scales ..... HARRISIMEMNA, p. 648.
b^{9}. Metathorax with moderate crest ... CERMA, p. 651.
b^{8}. Abdomen with the crests small.
a^{9}. Fore wing with the termen oblique towards tornus ..... IAMBIA, p. 654.
b^{9}. Fore wing with the termen evenly curved.
a^{10}. Fore wing long and narrow.
a^{11}. Fore wing with the termen erect ..... CALOGRAMMA, (2) p. 238.
b^{11}. Fore wing with the termen obliquely curved ..... PRODENIA, (2) p. 240.
b^{10}. Fore wing short and broad ..... CRANIOPHORA, (2) p. 51.
b^{6}. Thorax clothed with hair and hair-like scales.
a^{7}. Mesothorax with paired crests, patagia curled upwards at extremity ..... CANNA, (2) p. 19.
b^{7}. Mesothorax without crests, patagia not curled upwards at extremity ... CONSERVULA, p. 499.

j^5. Thorax without crests.
a^6. Thorax clothed chiefly with scales.
a^7. Palpi smoothly scaled and flattened against frons; fore wing narrow with the margins subparallel..... CLETHRORASA, p. .
b^7. Palpi not flattened against frons and with a tuft of scales at extremity of 2nd joint; fore wing triangular ... NEOPHÆNIS, p. 681.
b^6. Thorax clothed with hair and hair-like scales ..... FAGITANA, p. 592.
b^4. Abdomen with dorsal crest at base only.
a^5. Pro- and metathorax with divided crests..... CALPIFORMIS, p. 504.
b^5. Prothorax with sharp triangular crest, metathorax with divided crest ..... MACRONOCTUA, p. 431.
c^5. Prothorax with sharp triangular crest, metathorax with spreading crest ..... HYDRŒCIA, p. .
d^5. Prothorax with ridge-like crest, metathorax with spreading crest ..... ANDROLYMNIA, p. .
e^5. Thorax with slight dorsal ridge-like crest ..... PYRRHIA, p. .
f^5. Pro- and metathorax with spreading crests.
a^6. Thorax clothed chiefly with scales.
a^7. Pro- and metathorax with the crests formed of very long spatulate scales.
a^8. Fore wing with the apex produced and acute ..... PŒCILOGRAMMA, p. .
b^8. Fore wing with the apex rounded... OPSYRA, p. .
b^7. Prothorax with long flattened crest projecting backwards.
a^8. Fore wing with the termen excised below apex and excurved at middle. GERODA, p. .
b^8. Fore wing with the termen evenly curved..... MACAPTA, p. .
c^7. Prothorax with short spreading crest.
a^8. Mesothorax with slight paired crests ..... CRAMBODES, (2) p. 445.
b^8. Mesothorax without crests.
a^9. Palpi upturned, the 2nd joint reaching vertex of head.
a^{10}. Build slender.
a^{11}. Hind wing with vein 5 from middle of discocellulars.
a^{12}. Fore wing with the termen excised from apex to middle. GONODES, (2) p. 450.
b^{12}. Fore wing with the termen evenly curved.
a^{12}. Fore wing with the apex somewhat produced and acute ..... PLATYSENTA, (2) p. 447.
b^{13}. Fore wing with the apex rounded ..... MONODES, (2) p. 457.
b^{11}. Hind wing with vein 5 from below middle of discocellulars. HADJINA, (2) p. 521.
b^{10}. Build stout..... MONOPTYA, p. 432.
b^9. Palpi upturned, the 2nd joint reaching about to middle of frons.
a^{10}. Thorax roughly scaled ..... HYPOPLEXIA, p. 426.
b^{10}. Thorax smoothly scaled.
a^{11}. Palpi with the 3rd joint porrect.
a^{12}. Tegulæ produced to a slight dorsal ridge and hood ..... CATABENA, (2) p. 234.
b^{12}. Tegulæ normal ..... NAMANGANA, (2) p. 544.

b^{11}. Palpi with the 3rd joint upturned.
a^{12}. Fore wing with tufts of raised scales on the stigmata ..... PHÆOPYRA, p. 19.
b^{12}. Fore wing without tufts of raised scales on the stigmata. EUROMŒA, p. 425.
c^{9}. Palpi obliquely porrect, extending about the length of head ..... BALSA, (2) p. 454.
b^{6}. Thorax clothed with hair and hair-like scales.
a^{7}. Palpi with the 3rd joint long and porrect ..... RHYNCHOPLEXIA, p. 433.
b^{7}. Palpi with the 3rd joint short.
a^{8}. Palpi with the 2nd joint reaching to about vertex of head, build slender. TÆNIOSEA, p. 430.
b^{8}. Palpi with the second joint reaching to about middle of frons.
a^{9}. Fore wing with the apex produced and acute ..... CHIRIPHA, (2) p. 237.
b^{9}. Fore wing with the apex rounded.
a^{10}. Fore wing with the termen oblique towards tornus ..... HERÆMA, p. 429.
b^{10}. Fore wing with the termen not oblique towards tornus .. .. SIDEMIA, p. 435.
c^{6}. Thorax clothed with hair only ..... LASIPLEXIA, p. 483.
g^{5}. Prothorax without crest, metathorax with spreading crest.
a^{6}. Thorax clothed almost entirely with scales.
a^{7}. Palpi with the 2nd joint reaching vertex of head ..... AUCHA, p. 661.
b^{7}. Palpi with the 2nd joint reaching about middle of frons.
a^{8}. Fore tibia broadly fringed with hair; fore wing rather broad ..... SPODOPTERA, (2) p. 251.
b^{8}. Fore tibia slightly fringed with hair; fore wing long and narrow ..... LAPHYGMA, (2) p. 258.
b^{6}. Thorax clothed with hair and hair-like scales ..... COBALIODES, p. 505.
h^{5}. Thorax without crests.
a^{6}. Palpi with the 2nd joint reaching vertex of head.
a^{7}. Hind wing with vein 5 from middle of discocellulars.
a^{8}. Palpi with the 3rd joint long ..... POLIONYCTA, (2) p. 41.
b^{8}. Palpi with the 3rd joint short ..... GALGULA, (2) p. 439.
b^{7}. Hind wing with vein 5 from below middle of discocellulars.
a^{8}. Palpi with the 2nd joint flattened against frons ... . CHASMINA, p. .
b^{8}. Palpi with the 2nd joint cylindrical. BAGISARA, p. .
b^{6}. Palpi with the 2nd joint not reaching above middle of frons, the 3rd short.
a^{7}. Antennæ laminate and almost simple.
a^{8}. Fore wing with the inner margin somewhat excised towards tornus... EULYMNIA, p. .
b^{8}. Fore wing with the inner margin not excised towards tornus ..... ACRONYCTA, (2) p. 59.
b^{7}. Antennæ ciliated.
a^{8}. Thorax clothed chiefly with scales . AGRIOPODES, (2) p. 37.
b^{8}. Thorax clothed with hair only ..... EUTERPIA, p. .

c^4. Abdomen without dorsal crests.
a^5. Thorax with dorsal ridge-like crest; frons with projecting corneous plate below it ..... ECCLETA, p. 685.
b^5. Prothorax with triangular crest; metathorax with double ridge-like crest.
a^6. Fore wing with the termen strongly excurved at middle ..... BRACHYXANTHIA, p. .
b^6. Fore wing with the termen evenly curved..... LOPHOCALAMA, p. .
c^5. Prothorax with triangular crest, metathorax with spreading crest ... . IPIMORPHA, p. .
d^5. Prothorax with spreading crest, metathorax with divided crest ..... THALPOPHILA, p. 679.
e^5. Pro- and metathorax with spreading crests.
a^6. Thorax clothed chiefly with scales.
a^7. Fore wing long and narrow.
a^8. Palpi with the 2nd joint reaching vertex of head..... ARÆA, p. 688.
b^8. Palpi with the 2nd joint not reaching middle of frons ..... SYRRUSIS, p. 508.
b^7. Fore wing broad.
a^8. Palpi with the 2nd joint reaching vertex of head.
a^9. Palpi with the 3rd joint long.
a^{10}. Hind wing with vein 5 from middle of discocellulars ..... GRACILIPALPUS, p. 42.
b^{10}. Hind wing with vein 5 from below middle of discocellulars. SELAMBINA, p. 516.
b^9. Palpi with the 3rd joint moderate.
a^{10}. Palpi with the 3rd joint porrect.
a^{11}. Fore wing with the apex produced ..... CALLOGONIA, p. 589.
b^{11}. Fore wing with apex rounded... CARBONA, (2) p. 560.
b^{10}. Palpi with the 3rd joint upturned; fore wing with the apex somewhat produced and acute ..... STRIGIPHLEBIA, (2) p. 283.
b^8. Palpi with the 2nd joint reaching about middle of frons ..... AMPHIDRINA, (2) p. 294.
b^6. Thorax clothed with hair and hair-like scales ....
a^7. Palpi with 2nd joint reaching vertex of head; hind wing with the termen excised at discal fold ..... STYGIOSTOLA, p. 44.
b^7. Palpi with the 2nd joint reaching middle of frons; hind wing with the termen evenly curved.
a^8. Palpi with the 3rd joint porrect; fore wing narrow ..... LUPERINA, p. 466.
b^8. Palpi with the 3rd joint upturned; fore wing broader..... MERISTIS, p. .
f^5. Prothorax with spreading crest; metathorax without crest.
a^6. Fore wing narrow, the margins subparallel.
a^7. Palpi with the 2nd joint reaching vertex of head.
a^8. Hind wing with veins 3, 4 stalked. HYPOSTILBIA, (2) p. 293.
b^8. Hind wing with veins 3, 4 from cell. ATHETIS, (2) p. 296.
b^7. Palpi slender, the 2nd joint reaching middle of frons ..... ARGYROSPILA, p. .

b^6. Fore wing broad, triangular.
a^7. Thorax clothed with hair and scales mixed ..... Ramesodes, p. .
b^7. Thorax clothed with hair and hair-like scales..... Arenostola, p. .
g^5. Prothorax without crest; metathorax with small paired crests ..... Ariathisa, (2) p. 383.
h^5. Prothorax without crest; metathorax with spreading crest.
a^6. Thorax clothed with scales and hair mixed.
a^7. Palpi with the 2nd joint reaching vertex of head.
a^8. Palpi with the 3rd joint porrect ... Atimæa, p. .
b^8. Palpi with the 3rd joint upturned... Calymniodes, p. .
b^7. Palpi with the 2nd joint reaching about middle of frons..... Pseudina, p. .
c^7. Palpi short, porrect.
a^8. Tegulæ produced behind into a slight hood ..... Epimecia, (2) p. 288.
b^8. Tegulæ not produced into a hood.
a^9. Fore wing long and narrow.
a^{10}. Fore wing with the apex produced, the termen oblique ..... Fergana, (2) p. 289.
b^{10}. Fore wing with the apex not produced, the termen less oblique. Stilbia, (2) p. 290.
b^9. Fore wing shorter and broader ... Præstilbia, (2) p. 292.
b^6. Thorax clothed with hair only ..... Mydrodoxa, p. .
i^5. Thorax without crests.
a^6. Thorax clothed chiefly with scales.
a^7. Abdomen dorsally flattened..... Perinænia, p. 21.
b^7. Abdomen not dorsally flattened.
a^8. Fore wing long and narrow.
a^9. Build stout ..... Agrotisia, p. 692.
b^9. Build slender..... Proxenus, (2) p. 430.
b^8. Fore wing short and broad.
a^9. Build stout.
a^{10}. Palpi with the 2nd joint reaching vertex of head, slender,
a^{11}. Palpi flattened against frons ... Callyna, p. .
b^{11}. Palpi cylindrical ..... Elydna, p. .
b^{10}. Palpi with the 2nd joint reaching middle of frons, broadly scaled.
a^{11}. Hind wing with the termen excised at discal fold ..... Phuphena, p. 593.
b^{11}. Hind wing with the termen evenly curved ..... Nicara, p. .
b^9. Build slender.
a^{10}. Palpi upturned, the 2nd joint reaching vertex of head.
a^{11}. Palpi with the 3rd joint long... Melagramma, p. 691.
b^{11}. Palpi with the 3rd joint moderate ..... Micrathetis, (2) p. 443.
b^{10}. Palpi oblique, the 2nd joint reaching middle of frons ..... Amphilita, p. .
Thorax clothed with hair and hair-like scales.
a^7. Abdomen dorsally flattened.
a^8. Palpi with the 2nd joint fringed with hair in front.
a^9. Hind wing with vein 5 from middle of discocellulars..... Peripyra, p. 25.
b^9. Hind wing with vein 5 from below middle of discocellulars ..... Syntomopus, p. 22.

b^8. Palpi smoothly scaled; hind wing with vein 5 from middle of discocellulars ..... AMPHIPYRA, p. 26.
b^7. Abdomen not dorsally flattened.
a^8. Head and thorax clothed with rough hair and spatulate scales ..... OROPLEXIA, p. 510.
b^8. Head and thorax smoothly clothed with hair and hair-like scales.
a^9. Frons with ridges of hair above and between antennæ..... MIMLEUCANIA, (2) p. 285.
b^9. Frons without ridges of hair.
a^{10}. Fore wing with the apex somewhat produced and acute ..... CALYMNIA, p. .
b^{10}. Fore wing with the apex rounded. DICYCLA, p. .
c^6. Thorax clothed with hair only.
a^7. Eyes small, reniform.
a^8. Palpi extending about the length of head ..... EUTRICOPIS, p. .
b^8. Palpi extending to just beyond frons ..... PANEMERIA, p. .
b^7. Eyes large, round.
a^8. Abdomen dorsally flattened ..... BITYLA, p. 41.
b^8. Abdomen not dorsally flattened.
a^9. Abdomen entirely clothed with rough hair ..... DAPHÆNURA, p. .
b^9. Abdomen with rough hair at base only.
a^{10}. Build stout.
a^{11}. Palpi upturned, the 2nd joint moderately fringed with hair in front ..... ENARGIA, p. .
b^{11}. Palpi porrect, the 2nd joint fringed with long hair below.
a^{12}. Fore wing narrow ..... CALAMIA, p. .
b^{12}. Fore wing broad..... ORIA, p. .
b^{10}. Build slender ..... HYPOCŒNA, p. .
c^9. Abdomen smoothly scaled.
a^{10}. Palpi upturned ..... OMMATOSTOLA, p. .
b^{10}. Palpi porrect ..... HYPOCALAMIA, p. .

Genus **COSMODES.**

Type.
Cosmodes, Guen. Noct. ii. p. 289 (1852) ..... *elegans.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and moderately fringed with hair, the 3rd short; frons smooth; eyes large, round; antennæ of male ciliated; thorax clothed almost entirely with scales, the pro- and metathorax with spreading crests; tibiæ moderately fringed with hair; abdomen with dorsal crests on basal segments and large crest on 3rd segment. Fore wing with the apex rather produced and acute, the termen excised to vein 3 where it is angled, then excised to tornus where there is a scale-tooth; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 shortly stalked or from angle; 8 anastomosing with the cell near base only.

3591. Cosmodes elegans.

Phalæna elegans, Donov. Ins. New Holl. pl. 36. f. 5 (1805); Hudson, New Zealand Moths & Butterflies, p. 33, pl. vi. f. 2.

♂. Head and thorax whitish tinged with rufous, whitish at tips;

frons white with rufous bars above and between antennæ which are rufous; tegulæ with two slight dark lines at middle; patagia with oblique white bands; metathorax with whitish patch, some blackish scales at tips of patagia and metathorax; pectus and legs whitish tinged with rufous; abdomen white with the dorsal crests rufous. Fore wing whitish tinged with rufous and irrorated with a few black scales, the terminal area suffused with deep rufous and brown except towards costa; a very pale yellow-green fascia from subcostal nervure near base curving down to below vein 1, then upwards to median nervure at middle where it is confluent with a wedge-shaped mark in cell, these markings defined by silvery white lines; two similarly coloured conical patches

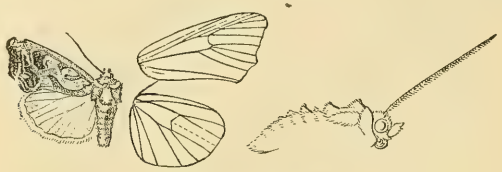


Fig. 1.—*Cosmodes elegans*, ♂. ½.

beyond the cell between veins 7 and 3 and 2 and 1, an oblique pale rufous fascia between veins 3 and 2 which are streaked with white, the area beyond the conical patches deep rufous to the silvery white postmedial line, which arises below costa, is angled outwards at vein 6 then oblique to vein 3 and between veins 2 and 1; a series of dark subterminal striæ excurved from costa to vein 6, then defined on inner side by silvery white striæ angled outwards at vein 3 and ending at vein 2, with deep rufous before them between veins 6 and 4; a terminal series of dark striæ with whitish before them above and below vein 3; cilia brown with a dark line through them, whitish at apex and below vein 3. Hind wing yellowish white, the terminal area broadly tinged with rufous from apex to vein 2; the underside white with a faint rufous tinge.

♀. Head and tegulæ deep rufous; thorax pale rufous; fore wing deep rufous, the costa dark with white points towards apex; the interspace between veins 3 and 2 pale rufous at base, then greyish, the postmedial white line obsolete except between veins 7 and 4 and with some fiery red beyond it, the subterminal line obsolete; hind wing with the terminal half blood-red.

Hab. Queensland, Brisbane (*Turner, Lucas*), 1 ♂, 2 ♀, Moreton Bay (*Diggles*), 2 ♂; N. S. Wales, Sydney (*Doubleday, Lambert, Daniel, Raynor, De la Garde, Rietmann*), 1 ♂, 9 ♀; Victoria, Gisborne (*Lyell*), 1 ♀; New Zealand, Auckland (*Colenso, Bolton, Oxley*), 4 ♀, Christchurch, Governors Bay, Napier, Okan. *Exp.* 32–36 millim.

Genus CANNA.

Type.
Canna, Wlk. xxxiii. 790 (1865) .... *pulchripicta.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and moderately fringed with hair, the 3rd short; frons smooth; eyes large, round; antennæ laminate; thorax clothed with elongate scales, the prothorax without crest, the mesothorax with paired tufts of scales, the metathorax with spreading crest; the patagia with upturned tufts of scales at extremity; tibiæ fringed with long hair; abdomen with dorsal series of crests, the crest on 4th segment large. Fore wing short and broad, the apex rounded, the termen excurved at middle and excised below apex and towards tornus which is somewhat lobed; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Abdomen with the crest on 4th segment formed of long black scales.
  a. Fore wing with the medial band green tinged with fuscous ..... *prasinaria.*
  b. Fore wing with the medial band red-brown..... *malachitis.*
B. Abdomen with the crest on 4th segment formed of ochreous hair..... *pulchripicta.*

3592. Canna prasinaria. (Plate CXXIII. fig. 18.)

Diphthera prasinaria, Wlk. xxxii. 615 (1865); Hmpsn. Moths Ind. ii. p. 294.

Head and thorax bright emerald-green; palpi black with some white in front and at extremity of 2nd joint; frons white below and with lateral black bars; some black behind the eyes; antennæ blackish; tips of tegulæ and outer edge of patagia with some white, the patagia tipped with black; a pair of black-tipped tufts of hair from mesothorax; pectus and legs with some white, the tibiæ marked with black, the tarsi black ringed with white; abdomen white, with diffused dorsal black bands, the crest on 4th segment very large and black, the ventral surface black at base, white at extremity. Fore wing bright emerald-green; subbasal line black, defined by white on outer side, excurved at median nervure and angled outwards as a triangular black mark on vein 1, a black streak beyond it on costa; antemedial line black defined by white on inner side, slightly angled inwards in cell and on vein 1, and very strongly excurved between those points, the area between it and medial line suffused with fuscous except below costa and cell and above inner margin; the medial line black defined by white on outer side, incurved below costa, slightly angled outwards in cell and inwards on median nervure, then bent outwards and angled in submedian fold, then incurved; reniform represented by an elliptical white patch, some slight fuscous suffusion beyond lower angle of cell; postmedial part of costa with white spots with black marks between them; the postmedial line almost subterminal, black

defined by white on outer side, incurved below costa, slightly angled outwards at vein 6, angled inwards at discal and submedian folds, excurved and minutely waved between those points; a subterminal black spot in discal fold; a terminal series of black points and lunule at discal fold; cilia intersected with brownish, with patch at discal fold and black lunules at tips. Hind wing very pale green, deeper at termen; a fuscous postmedial band expanding into a patch at discal fold; some black points on termen; cilia brownish white at tips; the underside white, the costal area striated with brown and irrorated with a few black scales, a blackish discoidal spot and diffused postmedial band from costa to vein 4.

Hab. Sikhim (*Atkinson*, *Lidderdale*, *Möller*, *Dudgeon*), 4 ♂, 8 ♀, type. *Exp.* 36–40 millim.

3593. Canna malachitis.

Telesilla malachitis, Oberth. Ét. Ent. v. p. 80, pl. 3. f. 9 (1881); Hmpsn. Moths Ind. ii. p. 294; Staud. Cat. Lep. pal. p. 130.
Canna splendens, Moore, P. Z. S. 1888, p. 412; Butl. Ill. Het. B. M. vii. p. 59, pl. 128. f. 4.

♂. Head and tegulæ white, tinged with bright apple-green; palpi dark red-brown, the tips of 2nd and 3rd joints white; antennæ red-brown, the basal joint white, black at tip; patagia rufous; vertex of thorax white mixed with rufous; pectus white, the legs suffused with rufous, the tarsi ringed with white; abdomen whitish, dorsally tinged with rufous, the crest on 4th segment formed of black scales, the ventral surface rufous. Fore wing brilliant malachite-green, the base darker green; subbasal line black, defined by white on outer side, slightly incurved from costa to vein 1, then angled outwards and rather diffused above inner margin; a medial pale rufous band, irrorated slightly with red-brown and defined by white lines, the inner edge with fine black line between the white and rufous from costa to vein 1, and the outer side with black line towards costa, the inner edge very obliquely excurved from costa to submedian fold, very slightly angled outwards at median nervure, and produced as a fascia on inner margin to near subbasal line, the outer edge oblique and irregularly sinuous from costa to below vein 2, then erect; the orbicular represented by a green point defined by black on inner edge of medial band, the reniform by an undefined white lunule; a dark striga from costa on the medial band; a brown point on costa just beyond the band; the costal edge white, with some brown points towards apex; the terminal area whitish to vein 6 and a white patch in submedian interspace; a terminal series of black points and a black-brown spot below vein 6 with a white lunule on it; cilia white with red-brown patches above and below middle. Hind wing white, faintly tinged with green; a diffused fuscous subterminal patch, broad at costa, narrowing to a point in submedian fold; a terminal series of

black points; the underside white, the costal area irrorated with a few black scales except towards base, the subterminal patch emitting teeth on the veins to termen, a terminal series of small black lunules from apex to vein 2.

♀. Hind wing with the brown subterminal band entire, narrowing to tornus.

Hab. E. Siberia, Ussuri, 2 ♂; W. China, Moupin (*Kricheldorf*), 1 ♂; Punjab, Kulu, Sultanpur (*G. Young*), 1 ♀, Simla (*Harford*), 1 ♂, Murree (*Harford*), 1 ♂, Dharmsála (*Hocking*), 4 ♀ type *splendens*; Sikhim. *Exp.* 32–40 millim.

3594. Canna pulchripicta.

Canna pulchripicta, Wlk. xxxiii. 790 (1865); Moore, P. Z. S. 1867, p. 61, pl. 6. f. 10; Hmpsn. Moths Ind. ii. p. 293.

♂. Head and tegulæ bright apple-green, the latter edged with white; palpi red-brown; frons with red-brown marks at sides; antennæ red-brown; thorax bright rufous, blackish behind, the prothorax with white patch; pectus whitish; legs rufous, with green patches on fore tibiæ; abdomen whitish, tinged with rufous. Fore wing bright emerald-green; a rufous band from base of costa extending as a fascia along inner margin to beyond middle, where it

Fig. 2.—*Canna pulchripicta*, ♂. ½.

ends in a point; a medial rufous band very oblique from costa to vein 2, then bent inwards to the fascia on inner margin, these rufous markings defined by fine white lines; a faint oblique darker green fascia from costa just before apex to the angle of medial band; a terminal white band from apex to vein 5, its lower part tinged with rufous; a rufous lunule slightly edged with white on termen in submedian interspace; cilia rufous, white at apex. Hind wing white, the terminal area tinged with brown from apex to vein 4, some slight black points on termen towards apex; cilia tinged with rufous; the underside with the costal area tinged with rufous.

Hab. Sikhim (*Russell*, *Atkinson*, *Dudgeon*), 8 ♂ type. *Exp.* 34–36 millim.

Genus **DASEOCHÆTA.**

	Type.
Daseochæta, Warren, Seitz. Macrolepidoptera, pt. 9, p. 11 (1907).	*viridis.*
Diphtherocome, Warren, Seitz. Macrolepidoptera, pt. 9, p. 11 (1907)	*pallida.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to vertex of head and fringed with hair in front, the 3rd rather long, naked; frons smooth; eyes large, round; antennæ of male typically ciliated; thorax clothed with long rough hair and hair-like scales, the pro- and metathorax with spreading crests, the patagia tufted at extremity; tibiæ fringed with hair; abdomen with dorsal series of crests, large at middle. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only

Sect. I. (*Daseochæta*). Antennæ of male bipectinate with long branches to apex.

3595. Daseochæta viridis.

Agriopis viridis, Leech, P. Z. S. 1889, p. 502, pl. 51. f. 6.

Head and thorax yellow-green; palpi black; sides of frons brown; antennæ brown; tegulæ with black band at base and black lunules at middle; pro- and metathorax with black bands; pectus ochreous white; fore tibiæ streaked with black, the mid and hind tibiæ banded with black, the tarsi banded black and white; abdomen dark red-brown, the ventral surface whitish at middle.

Fig. 3.—*Daseochæta viridis*, ♂. ½.

Fore wing yellow-green; subbasal line represented by a black point on costa followed by a striga; a short black streak in base of submedian fold; a slight subbasal black streak above inner margin; antemedial line black defined by white on outer side, double at costa, incurved in cell, then waved, excurved in submedian interspace and oblique to inner margin; claviform short and broad, defined by black; orbicular and reniform large, defined by black and white at sides, open above and below, the former round, a blackish streak between them above median nervure; an irregular medial black bar from costa and a waved line from cell to inner margin interrupted above the claviform, then touching it; postmedial line double at costa, strongly bent outwards and obsolete

below costa, then black defined by white on inner side, waved, angled inwards in discal fold and strongly incurved below vein 4, then outwardly oblique to inner margin, two black points on its inner edge in submedian interspace and some black and white points beyond it on costa; an oblique black bar from costa before apex, a short oblique subterminal streak above tornus and point on inner margin; a terminal series of black points; cilia ochreous at base, chequered white and brownish at tips. Hind wing brown with traces of a pale postmedial line; the termen whitish between veins 4 and 1; cilia white with some brown marks at base, wholly brown at apex; the underside brown with slight discoidal point and indistinct sinuous whitish postmedial line, the termen whitish with black striæ.

Hab. Japan, Yokohama (*Manley*, *Pryer*), 3 ♂, 2 ♀ type. *Exp.* 44–50 millim.

Sect. II. (*Diphtherocome*). Antennæ of male bipectinate with moderate branches, the apical fourth ciliated.

A. Fore wing with strong black band on outer edge of postmedial line ..... *metaphæa.*

B. Fore wing without strong black band beyond postmedial line.

a. Fore wing with black mark in submedian interspace before postmedial line ..... *pallida.*

b. Fore wing without black mark in submedian interspace before postmedial line ..... *vivida.*

3596. **Daseochæta metaphæa**, n. sp. (Plate CXXIII. fig. 19.)

Head and thorax bright emerald-green; palpi and sides of frons black; antennæ brown; tegulæ with black outer edge and dorsal spot; pro-, meso- and metathorax with paired black spots; pectus brownish and black; tibiæ banded green and black, the tarsi black and white; abdomen brownish white suffused with black at middle above and below. Fore wing bright emerald-green; a subbasal black bar from costa; a short black streak in base of submedian fold and a black streak above inner margin from near base to the antemedial line, which is strong, black defined by white on outer side, angled inwards on median nervure and outwards in submedian fold, then incurved and ending at the black streak above inner margin, a slight white streak beyond it in submedian interspace, with black striga representing the extremity of claviform, then a black fascia before postmedial line with spurs above and below from its inner side; orbicular and reniform defined by black and white at sides and with quadrate black patch between them, open above and below, the former small, round; a black bar from middle of costa and spot on inner margin; postmedial line with double black points at costa, strongly bent outwards and obsolete below costa, then forming a strong black band defined by white on inner side, joined by a black bar from costa, its inner edge angled inwards in discal fold and outwards at vein 4, then sinuous and very oblique

to submedian fold and excurved to inner margin, its outer edge excurved at middle; a terminal series of black points; cilia with series of black lunules at tips. Hind wing fuscous brown with narrow pale green terminal band with some dark striæ on termen; cilia whitish; the underside brownish white, the costal area green, a strong black band from costa to the discoidal spot, and faint band from it to inner margin, traces of a much interrupted postmedial line and some black striæ on termen.

Ab. 1. Hind wing white not tinged with fuscous or green.

Hab. W. China, Pu-tsu-fang, 3 ♂, 2 ♀ type. *Exp.* 30–34 millim.

3597. Daseochæta pallida.

Diphtera pallida, Moore, P. Z. S. 1867, p. 46, pl. 6. f. 6; Hmpsn. Moths Ind. ii. p. 295.

Head and thorax yellow-green; palpi black, white at tips; sides of frons black; antennæ brown, white at base; tegulæ with dorsal black spot at base; pro- and metathorax with paired black spots; shoulders with black streaks; tibiæ with black spots, the tarsi banded black and white; pectus ventrally with black patch; abdomen brownish white dorsally tinged with green, the crests black, ventrally with large black patch with some white sublateral points. Fore wing yellow-green, the costal edge white; subbasal line represented by a black striga from costa followed by a bar; a short curved black streak below base of cell and a curved streak above

Fig. 4.—*Daseochæta pallida*, ♂. ½.

inner margin, with some whitish above it extending to antemedial line, which is represented by two black striæ from costa and a black line defined by white on outer side from subcostal nervure to the black fascia below vein 1, bent outwards at median nervure, angled outwards in submedian fold, then incurved; the medial area with white fascia in submedian fold crossed by a black striga representing the extremity of the claviform, the orbicular defined by a black striga on inner side, its outer side by a quadrate black patch angled inwards above median nervure defining the inner edge of reniform, which has a black bar with points above and below it on its outer edge, the stigmata with some white on the edges of the black marks, a black spot on costa above outer edge of reniform, a short oblique streak from inner margin with its inner extremity bent upwards, and a short fascia in submedian fold with spurs from its inner

extremity above and below before the postmedial line, which is represented by two black points on costa and by a black line defined by white on inner side from below costa much nearer termen, angled inwards in discal fold, outwards at veins 4, 3, then bent inwards and sinuous to inner margin, an oblique black bar beyond it from costa; a subterminal series of black points with slight white marks before them in the interspaces between veins 7 and 1; cilia green at base, the tips white with a series of black lunules. Hind wing pale blue-green with faint blackish discoidal spot and traces of medial and postmedial lines; the underside with strong black-brown band from costa to the discoidal spot and interrupted line from it to inner margin, a slight much-interrupted postmedial line and series of points and striæ just before termen.

Hab. W. China, Omei-Shán, 1 ♀, Pu-tsu-fang, 1 ♀; Kashmir, Goorais Valley (*Leech*), 1 ♀; Punjab, Thundiani (*Yerbury*), 1 ♀; Sikhim Tibet, Yatong (*Hobson*, *Bingham*), 2 ♂, 3 ♀; Sikhim (*Atkinson*, *Lidderdale*), 1 ♂, 2 ♀ type. *Exp.* 36–46 millim.

3598. **Daseochæta vivida.** (Plate CXXIII. fig. 20.)

Diphthera vivida, Leech, Trans. Ent. Soc. 1900, p. 137.

Head and thorax yellow-green; palpi black, ochreous at tips; frons and vertex of thorax ochreous; antennæ ochreous ringed with black; shoulders with black-brown patches; pectus ochreous and red-brown, the tibiæ green with black spots, the tarsi ochreous banded with black; abdomen ochreous white with some blackish hairs, the ventral surface with large black-brown patch. Fore wing yellow-green; subbasal line represented by double black striæ from costa and spot below cell; a black fascia above inner margin from base to the antemedial line, which is black defined by white on outer side, incurved in cell, angled outwards in submedian fold then incurved and ending at the black fascia; claviform defined by black and white at extremity; orbicular and reniform defined by black and white at sides and with quadrate black patch between them, open above and below, the former round; a black bar from costa to outer edge of orbicular and a slight minutely waved oblique brown line from cell to inner margin; postmedial line with double black points at costa, then black defined by white on inner side, strongly bent outwards below costa, then dentate and strongly incurved below vein 4, an oblique black bar beyond it from costa and some brownish suffusion on its outer edge; a terminal series of black points; cilia chequered red-brown and white at tips. Hind wing white faintly tinged with green; slight traces of a discoidal spot and postmedial line; the underside with the costal area suffused with green, a black band from costa to lower angle of cell with short streak before it in cell, and obsolescent band to inner margin, an interrupted postmedial line from costa to vein 4, and on inner area and series of small lunules just before termen.

Hab. W. China, Omei-Shán, 1 ♀, Ni-tou, 3 ♀, Pu-tsu-fang, 2 ♂, 2 ♀ type. *Exp.* 34–40 millim.

Sect. III. Antennæ of male bipectinate with short branches, the apical third ciliated.

A. Hind wing with broad brownish subterminal band ..... *vigens.*
B. Hind wing without subterminal band.
a. Fore wing with large quadrate black mark in submedian interspace before postmedial line ..... *brevipennis.*
b. Fore wing with slight black spot in submedian interspace before postmedial line ..... *fasciata.*

3599. Daseochæta vigens.

Diphtera vigens, Wlk. xxxii. 616 (1865); Hmpsn. Moths Ind. ii. p. 294.

Head and thorax deep emerald-green; palpi black, white at tips; frons whitish, black at sides; antennæ black-brown; shoulders with black streaks; metathorax with paired black patches; pectus ventrally black-brown; the tibiæ green with black spots, the tarsi black-brown banded with whitish; abdomen yellow suffused with black-brown on terminal half, some green on dorsum and anal tuft, the crests tipped with black, the ventral surface black-brown with two sublateral white points at middle, a ventral series and bar before the green anal tuft. Fore wing deep emerald-green, the costal edge white; a curved black mark from base of costa to median nervure, a subbasal black striga from costa and a black fascia on inner margin extending to the antemedial line, which is

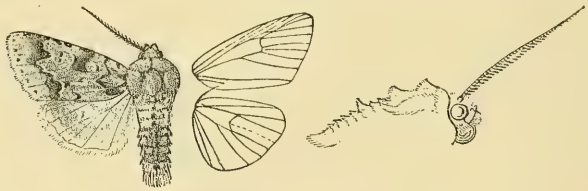


Fig. 5.—*Daseochæta vigens,* ♂. ½.

black defined by white on outer side, angled inwards on median nervure, outwards in submedian fold, then oblique and excurved above inner margin; a black striga in submedian fold representing the extremity of the claviform with white fascia from it to the black spot on inner edge of postmedial line; orbicular and reniform defined by black and white at sides, and with quadrate black patch between them, open above and below, the former round; a black bar from costa to outer edge of orbicular, and a slight blackish lunule on inner margin; postmedial line represented by two black points on costa and a black line defined by silvery white on inner side from below costa much nearer termen, incurved in discal fold, angled outwards at vein 4, then oblique and slightly sinuous to submedian fold and outwardly oblique to inner margin, a band of dark suffusion beyond it and some black and white points on costa;

a terminal series of black points; cilia white at tips with series of black-brown lunules. Hind wing pale emerald-green, the basal and inner areas suffused with brownish ochreous; traces of a medial line; a fine postmedial line angled outwards at vein 5, then incurved, and a broad brownish subterminal band; cilia brown at apex; the underside with black band from costa to just before the discoidal lunule and brownish band on inner area, postmedial line with spots on costa and in discal and submedian folds, slightly bent outwards below costa and incurved in submedian fold, a broad black-brown band beyond it from costa to vein 4, some striæ on termen and two spots at discal fold.

Hab. Sikhim (*Atkinson*, *Möller*, *Dudgeon*), 5 ♂, 5 ♀ type. *Exp.* 36–40 millim.

3600. **Daseochæta brevipennis**, n. sp. (Plate CXXIII. fig. 21.)

Head and thorax pale blue-green; palpi black; antennæ brown; shoulders with black patches; tibiæ with black spots, the tarsi banded black and white; abdomen ochreous white dorsally suffused with brown, ventrally black-brown. Fore wing pale blue-green, the basal and postmedial areas suffused with olive-green; subbasal line represented by a black striga from costa; a short black streak in base of submedian fold and a curved black streak above inner margin from near base to the antemedial line, which is black defined by white on outer side, incurved in cell, angled outwards in submedian fold, then incurved and ending at the streak above inner margin; claviform minute, defined by some black scales above and at extremity; orbicular and reniform defined by black and white at sides and with quadrate black patch between them, the former small, round, sometimes defined by black below; a black bar from middle of costa and oblique striga from inner margin; the medial area with white fascia in submedian fold ending in a quadrate black spot before postmedial line, with spurs above and below from its inner edge; postmedial line black defined by white on inner side, bent outwards below costa, incurved at discal fold, excurved and slightly angled at veins 4, 3, then strongly incurved to submedian fold and excurved to inner margin, some black points beyond it on costa, followed by a triangular spot; a series of black points formed by diffused scales towards termen; cilia with terminal series of black lunules. Hind wing white faintly tinged with green; a diffused blackish discoidal spot with diffused band from it to inner margin and traces of a postmedial line at middle and towards tornus; the underside with slight black streak in middle of cell, diffused curved medial band blacker towards costa and more or less confluent with the discoidal spot, much interrupted postmedial line, and series of black points before termen.

Hab. Sikhim Tibet, Yatong (*Bingham*), 2 ♂, 1 ♀ type. *Exp.* 32 millim.

3601. Daseochæta fasciata.

Diphthera fasciata, Moore, P. Z. S. 1888, p. 408; Butl. Ill. Het. B. M. vii. p. 30, pl. 122. f. 1; Hmpsn. Moths Ind. ii. p. 295.

Palpi black, white at tips; head brownish white, the vertex green, the sides of frons black, the antennæ brown, white at base; tegulæ and patagia blue-green, the dorsum of thorax brownish white; pectus green at sides, black-brown ventrally; tibiæ green with black marks, the tarsi banded black-brown and white; abdomen brownish white with large black-brown ventral patch. Fore wing pale blue-green with some darker suffusion before the antemedial and beyond the postmedial line; subbasal line represented by a black point on costa followed by a bar; a very short black streak below base of cell and an oblique white fascia above a curved black fascia on inner area extending to the antemedial line, which is represented by an oblique striga from costa and a line slightly defined by white on outer side from subcostal nervure to the black streak above inner margin, bent outwards at median nervure, angled outwards in submedian fold, then incurved; the medial area with white streak in submedian fold with black point on it at extremity of claviform; orbicular and reniform defined by black and white at side and with quadrate black patch between them, open above and below, the former round, a black bar from costa to the black patch, a point on inner margin and a small black lunule in submedian fold on inner edge of the postmedial line, which is represented by two black points on costa and a black line defined by white on inner side from below costa much nearer termen, angled inwards in discal fold, outwards on veins 4, 3, then bent inwards and outwardly oblique to inner margin, a black spot with white point on it beyond it on costa; cilia with slight black-brown lunules at tips. Hind wing pale blue-green with some ochreous hair on inner area; a diffused blackish discoidal spot; the underside with strong black bar from costa to the discoidal spot and two spots on inner area, postmedial points below costa and vein 7 and small spots in discal and submedian folds and above inner margin.

Hab. W. China, Pu-tsu-fang, 1 ♂, 1 ♀; Punjab, Laka (*Hocking*), 1 ♀; Sikhim, 1 ♀. *Exp.* 44 millim.

Sect. IV. Antennæ of male serrate and fasciculate.

3602. Daseochæta chrysochlora.

Diphthera chrysochlora, Hmpsn. J. Bomb. Nat. Hist. Soc. xi. p. 445 (1897).

Head and thorax bright yellow-green; palpi brown above, whitish at tips; frons whitish tinged with rufous; antennæ brown, ochreous at tips; pectus and legs rufous, the fore tibiæ green in front; abdomen rufous, the crest on 3rd segment green, the ventral surface whitish irrorated with red-brown. Fore wing bright yellow-green

irrorated with dark green and suffused with dark green before the antemedial line, below end of cell and beyond the postmedial line; a rather diffused dark subbasal line from costa to submedian fold in which there is a short diffused dark streak at base; antemedial line rather diffused, double filled in with green, highly waved, erect: claviform slightly defined by brownish, large; orbicular and reniform bright green slightly defined by brownish and their centres by dark green, a brown patch between them in cell, the former small,

Fig. 6.—*Daseochæta chrysochlora*, ♂. ½.

round, the latter slightly angled inwards on median nervure; a brownish patch on middle of costa; postmedial line double filled in with green and with some whitish scales in places, bent outwards below costa, then dentate, strongly incurved in discal fold, angled outwards at vein 4, very oblique to submedian fold and angled outwards on vein 1; subterminal line only defined by the irregular edge of the dark green area, angled outwards at veins 7 and 4 and inwards at discal and submedian folds; a terminal series of slight blackish lunules defined on inner side by slight pale lunules, becoming whitish between vein 3 and tornus; cilia with slight black lunules at tips from vein 4 to tornus. Hind wing deep red-brown, the cilia brownish white with a slight dark line through them; the underside with some whitish in interspaces of medial area and at apex, a blackish discoidal lunule, waved postmedial line excurved below costa then oblique, and terminal series of black lunules.

Hab. Assam, Khásis, 1 ♂, 1 ♀ type. *Exp.* ♂ 30, ♀ 32 millim.

Sect. V. Antennæ of male ciliated.

A. Hind wing with white patch at tornus crossed by an oblique black bar ..... *alpium.*

B. Hind wing without white patch at tornus.

a. Fore wing with black postmedial band interrupted by white streaks on veins 6, 4, 3, 2 ..... *muscosa.*

b. Fore wing with the postmedial band not interrupted by white streaks.

a^1. Fore wing with the postmedial line interrupted by rufous between veins 4, 3.

a^2. Fore wing with minutely dentate subterminal line on outer edge of postmedial band ..... *discibrunnea.*

b^2. Fore wing with the subterminal line not defined... *marmorea.*

b^1. Fore wing with the postmedial line not interrupted by rufous between veins 4, 3.

a^2. Hind wing with the ground-colour whitish ..... *verbenata.*

b^2. Hind wing with the ground-colour yellow ..... *beryllodes*

3603. Daseochæta alpium.

Noctua ludifica, Sepp, Ins. Ned. i. (4) p. 41, pl. 9. ff. 1–8 (1732), nec Linn.
Noctua aprilina, Schiff. Wien. Verz. p. 70 (1776); Sepp, Ins. Ned. iv. (corrigenda); Hübn. Eur. Schmett., Noct. f. 22 (nec Linn.).
Noctua alpium, Osbeck, Götheb. Samml. Handl. (Wet. Afd.) i. p. 52, pl. 1. f. 2 (1778); Staud. Cat. Lep. pal. p. 130.
Noctua orion, Esp. Schmett. iv. pl. 118. ff. 4–7 (1787); Dup. Lép. Fr. vi. p. 203, pl. 85. f. 5; Steph. Ill. Brit. Ent., Haust. iii. pl. 46. f. 2; Curt. Brit. Ent. v. pl. 404; Frr. Beitr. pl. 22.
Noctua runica, Gmel. Ed. Syst. Nat. i. 5, p. 2561 (1788).
Moma murrhina, Græs. Berl. ent. Zeit. 1888, p. 314.

Head and thorax emerald-green; palpi black, the extremity of 2nd joint white, the 3rd joint white with black band; sides of frons black; antennæ ringed black and white at base; tegulæ black, white at base and white and green at tips; patagia mostly black at tips; vertex of thorax with some black hair; pectus and legs white mixed with brown, the tarsi banded brown and white; abdomen pale brown with white segmental rings, the crests black, the ventral surface whitish. Fore wing emerald-green; a white fascia in submedian fold from base to postmedial line, the costal edge white; a subbasal black point on costa; a black antemedial band expanding into a patch on costa, slightly angled inwards in cell and outwards on median nervure, angled inwards to base at

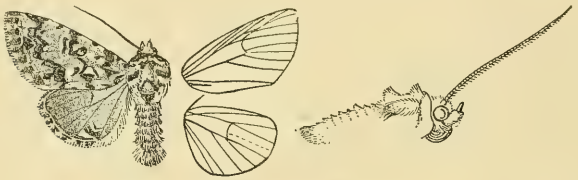


Fig. 7.—*Daseochæta alpium*, ♂. ½.

vein 1, where it is interrupted; orbicular represented by a very oblique black mark confluent with the lower edge of reniform, which is represented by two black bars on a white patch, with black patch from costa to inner bar with points before and beyond it; a medial black line from origin of vein 2 to inner margin, angled outwards in submedian fold and forming a triangular mark on vein 1 with oblique black striæ before and beyond it across the white fascia in submedian fold; postmedial line strong, black, defined on outer side by small rather wedge-shaped brownish marks except towards costa, where it is dilated with two points on it, excurved below vein 7 and at middle and incurved below vein 3; a subterminal series of small white spots in the interspaces with black lunules on their outer side and black patches before them at middle and in submedian interspace; cilia chequered white and fuscous. Hind wing whitish suffused with brown, the terminal area slightly darker; an indistinct dark discoidal lunule; a white

patch at tornus crossed by an oblique brown bar and with black point on its inner edge; cilia chequered fuscous and white; the underside greenish white slightly tinged with brown, the costal area with some brown irroration at and beyond middle, the terminal area irrorated with brown, a black discoidal bar, postmedial line waved from costa to vein 5, then incurved and almost obsolete, and diffused waved postmedial line.

Ab. 1. *murrhina*. Fore wing with the terminal area mostly suffused with red-brown.

Hab. Britain, Leech Coll.; France, Sand & Leech Colls.; Germany, Zeller, Frey, & Leech Colls.; Austria, Leech Coll.; Hungary; Switzerland; Spain, Bilbao; Italy; Scandinavia; Russia, Livonia, Zeller Coll.; Armenia; E. Siberia, Ussuri; Japan, Myanoshita (*Yerbury*), 1 ♂, 1 ♀, Oiwake (*Pryer*), 3 ♂, Tokio (*Fenton*), 2 ♀, Yokohama (*Jonas*, *Pryer*), 1 ♂, 1 ♀; Corea, Gensan (*Leech*), 1 ♂, 1 ♀; C. China, Kiukiang (*Pratt*), 1 ♀; W. China, Omeishan, 1 ♀, Chang-yang (*Pratt*), 1 ♂, 2 ♀. *Exp.* 33–42 millim.

Larva. Meyr. Brit. Lep. p. 139; Barrett, Lep. Brit. iii. p. 216, pl. 119. f. 2.

Brownish ochreous with several irregular yellowish lines, the dorsum black on somites 3–11; pale yellow or whitish transverse dorsal patches on somites 4–6 and 9; tubercles reddish, bearing tufts of brown or whitish hairs; head black, marked with yellowish. Food-plants: Oak, Birch, Beech, &c. 7–9.

3604. Daseochæta muscosa.

Bryophila muscosa, Hmpsn. Ill. Het. B. M. viii. p. 72, pl. 144. f. 15 (1891); id. Moths Ind. ii. p. 298.
Diphthera imray, Hmpsn. J. Bomb. Nat. Hist. Soc. xvii. p. 472 (1906).

Palpi black with a few white scales, the extremity of 2nd joint white; frons white; vertex of head black mixed with white scales, the basal joint of antennæ white behind and the back of head with white patches, the base of shaft of antennæ ringed with white; tegulæ and patagia green and white at base, black at tips; vertex of thorax black and white mixed; pectus mostly white, the legs black, the tibiæ and tarsi ringed with white and with white patches at base of tibiæ; abdomen whitish suffused with black leaving slight white segmental rings, the crest on 3rd segment rufous, the anal tuft white at tip. Fore wing blue-green, the costa black except at base; a white spot at base with some black beyond and below it; a short white fascia in submedian interspace; a subbasal white point on costa followed by a black patch extending to median nervure; an antemedial white point on costa, black spot in submedian fold and black points with white point between them on inner margin; claviform white defined by black suffusion; orbicular white defined by black, small, round; reniform white defined by black with some green in centre and black point in upper part and

spot in lower, elliptical; a medial black bar from costa and oblique line from cell to inner margin; the veins beyond the cell with white streaks with postmedial black point on vein 6 and oblique minutely dentate line from vein 4 to inner margin, incurved in submedian interspace; postmedial part of costa with three small white spots; a broad black subterminal band interrupted by dentate white marks between veins 4 and 2, its outer edges excurved below costa and at middle and with white spot at vein 6; the terminal area with black bar from apex and irregular spot at vein 6, the veins with short black streaks at extremities; a terminal series of black striæ; cilia chequered black and white. Hind wing whitish, the costal half and terminal area suffused with black, the inner area with brown hair; cilia white intersected with black and mixed with black towards apex; the underside white, the costal area thickly irrorated with black and the apex suffused with black, a diffused black bar from middle of costa, slight discoidal spot, black postmedial line curved and minutely waved from costa to vein 4, then indistinct, and terminal series of lunules except towards tornus.

♀. Hind wing nearly entirely suffused with black.

The thorax has rather more scales than in typical species.

Hab. Madras, Nilgiris (*Hampson*), 1 ♀ type; Travancore, Pirmad (*Imray*), 3 ♂, 2 ♀, type *imrayi*. *Exp.* 34–38 millim.

3605. Daseochæta discibrunnea. (Plate CXXIII. fig. 22.)

Diphthera discibrunnea, Moore, P. Z. S. 1867, p. 46, pl. 6. f. 14; Hmpsn. Moths Ind. ii. p. 295.

Head and thorax pale yellow-green; palpi brown, the extremity of 2nd joint white; frons with lateral brown bars; antennæ pale brown; tegulæ and patagia slightly edged with brown; shoulders with brown patches; pectus and legs whitish tinged with red-brown; abdomen whitish tinged with yellow-brown, the crests fuscous at tips. Fore wing yellow-green mixed with whitish; subbasal line double, black-brown, from costa to a red-brown patch in base of submedian interspace with small blackish loop below it; antemedial line represented by small double dark brown spots on costa and submedian interspace and single mark in cell, the inner submedian spot confluent with the basal brown patch; claviform defined by a blackish lunule at extremity; orbicular defined by blackish lunules at sides, the reniform by blackish lunules at sides with slight whitish striæ representing the annulus; a red-brown bar from middle of costa extending between the stigmata; postmedial line double, minutely waved, much interrupted, bent outwards and interrupted below costa, interrupted by rufous at vein 6 and between veins 4, 3, incurved below vein 3 and angled outwards at vein 1; postmedial area suffused with rufous except at costa and inner margin, and with some white points with black streaks between them on costa, its outer edge formed by the faint, minutely

waved subterminal line, with some slight brown points on its outer side, slightly angled inwards below costa, excurved at middle and bent outwards to tornus; the terminal area slightly irrorated with fuscous, a terminal series of black points; cilia with a series of brown spots at tips. Hind wing very pale green, tinged with yellow-brown on disk and inner area, the apical area suffused with brown; a faint curved postmedial line and faint subterminal line incurved below vein 4 and bent outwards to tornus; cilia brown at apex, whitish, with a brown spot below apex; the underside white, the costal area irrorated with rufous, and the apex suffused with rufous, a brown discoidal spot and maculate postmedial line incurved below vein 3, some brown lunules on termen from apex to vein 2.

♀. Hind wing with the broad brownish subterminal band entire.

Ab. 1. Fore wing suffused with olive-green.—Punjab.

Hab. Punjab, Murree (*Harford*), 1 ♂, Dalhousie (*Harford*), 1 ♀; Sikhim (*Atkinson, Dudgeon*), 3 ♂, 3 ♀, type. *Exp.* 36–44 millim.

3606. Daseochæta marmorea. (Plate CXXIII. fig. 23.)

Diphthera marmorea, Leech, Trans. Ent. Soc. 1900, p. 136.

Head white tinged with ochreous; palpi black-brown, whitish at tips of 2nd and 3rd joints; sides of frons and head behind antennæ with black-brown marks; antennæ brownish; thorax pale green, the tegulæ and patagia slightly edged with brown, the prothoracic crests ochreous; pectus and legs ochreous and dark red-brown, the tibiæ with some green, the tarsi with pale rings; abdomen ochreous mixed with dark brown towards extremity, the ventral surface dark brown irrorated with ochreous. Fore wing pale yellow-green, the base red-brown confluent with a conical subbasal black-brown mark in submedian interspace, its outer edge extending to just below vein 1; a subbasal green striga from costa on the brown area; an antemedial triangular black-brown spot on costa with point beyond it; claviform represented by a curved black striga at extremity from median nervure; orbicular and reniform very large and defined by black at sides only, the former rather quadrate, the latter elliptical, the cell between them suffused with rufous; a black-brown bar from middle of costa; the area beyond and below reniform suffused with rufous; a black point on inner margin before the postmedial line which is double, the inner line indistinct and very incomplete, bent outwards and interrupted below costa, interrupted by rufous at vein 6 and between veins 4, 3, incurved at discal fold, slightly angled outwards at veins 4, 2, 1, and strongly inwards in submedian fold; the postmedial area suffused with rufous and with black in submedian interspace, and with some pale points on costa, its outer edge representing the subterminal line, slightly incurved

below costa, angled outwards at vein 5, then incurved; a series of black points just before termen; cilia with series of black-brown lunules at tips. Hind wing very pale green, the basal and inner areas yellowish, the apical area suffused with brown, a faint discoidal spot and curved postmedial line; the underside with the costal area irrorated with brown, a large black discoidal spot, indistinct spot at middle of costa, sinuous postmedial line incurved below vein 4 and with black spot in discal fold, and dark irroration beyond it from costa to vein 4.

Hab. W. China, Pu-tsu-fang, 1 ♂, 2 ♀, type. *Exp.* ♂ 40, ♀ 42 millim.

*3607. Daseochæta verbenata. (Plate CXXIII. fig. 24.)

Diphthera verbenata, Dist. A. M. N. H. (7) i. p. 222 (1898).

♂. Head and thorax bright yellow-green; palpi blackish, the extremities of joints white; sides of frons yellowish white; antennæ brownish; tegulæ with some black scales near tips; pro- and metathorax and upper edge of patagia with some black scales; pectus and legs ochreous white mixed with brown, the fore tibiæ with some black and green, the tarsi banded with black; abdomen ochreous white with slight brownish segmental lines. Fore wing bright yellow-green irrorated with white and a few black scales; subbasal line represented by black striæ from costa and cell; a slight black streak in base of submedian fold; antemedial line white defined on each side by black scales, erect, waved; orbicular and reniform small, with slight white annuli defined at sides by black scales, the former round, the latter somewhat constricted at middle, a blackish patch between them; a medial black striga from costa and traces of a waved line from cell to inner margin; postmedial line white defined strongly by black on outer side, slightly on inner, strongly bent outwards below costa, then minutely dentate, slightly incurved at discal fold, incurved below vein 4, some black and white points beyond it on costa and some brownish suffusion at discal and submedian folds; an indistinct dentate blackish subterminal line, angled outwards at vein 7 and incurved below vein 3; a terminal series of prominent black lunules and wedge-shaped spot at submedian fold, defined on inner side by white lunules; cilia green with white line at base and some black scales at tips. Hind wing yellowish white with slight dark discoidal bar, indistinct curved postmedial line, and diffused subterminal band; a lunulate blackish terminal line; the underside with the terminal half irrorated with a few black scales, a black discoidal lunule, sinuous postmedial line, and terminal series of small lunules.

Thorax with rather more scales than in typical species.

Hab. Transvaal, Barberton (*Rendall*), type † in Coll. Distant. *Exp.* 32 millim.

*3608. **Daseochæta beryllodes.** (Plate CXXIII. fig. 25.)

Dipthera beryllodes, Turner, Trans. R. Soc. S. Austr. 1903, p. 5.

♂. Palpi ochreous and brown; head and thorax bright green; frons white; antennæ rufous with the basal joint white in front; tegulæ with the basal half rufous and black medial line; patagia and metathoracic crests at tips with some black scales; fore tarsi, terminal half of mid tibiæ, and hind legs ochreous and black; abdomen ochreous with blackish lateral stripes, the dorsal crest on 1st segment green, the others blackish. Fore wing bright green; a small black lunule at base of cell with rufous and black lunules below and beyond it, the latter with white below it; subbasal and antemedial black points on costa with a semicircular black-edged rufous mark between them; an antemedial black point on inner margin; a small comma-shaped white spot in middle of cell; a waved medial black line interrupted by the white reniform with waved black bar on it; postmedial line remote from cell, black, irregular, excurved below costa, angled outwards at veins 4 and 3, incurved at discal and submedian folds, defined by white on inner side, strongly in submedian fold, with a rufous band on its outer edge bounded by the indistinct subterminal line, which has some black on it below costa, is incurved at vein 7 and below vein 4, somewhat dentate at middle and excurved in submedian fold, the rufous extending to near termen above middle; a terminal series of small black lunules; cilia chequered with brown. Hind wing ochreous tinged with brown; a dark discoidal lunule; the terminal area dark brown with sinuous inner edge; cilia chequered white and brown. Underside ochreous with dark discoidal lunules and irregularly waved medial and postmedial lines with irregular dark band beyond the latter.

Hab. Queensland, Dulong, Blackall Range, type † ♂ in Coll. Turner. *Exp.* 44 millim.

Genus **LEUCONYCTA**, nov.

Type, *L. diphteroides.*

Proboscis fully developed; palpi obliquely upturned, slender, the 2nd joint reaching about to middle of frons and moderately fringed with scales in front, the 3rd rather long; frons with transverse ridge; eyes large, round; antennæ of male ciliated; thorax clothed with hair and scales mixed, the pro- and metathorax with spreading crests; build slender; tibiæ smoothly scaled; abdomen with dorsal crest at base only. Fore wing with the apex rounded, the termen evenly curved and slightly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with medial black patch on costa ..... *diphteroides.*
B. Fore wing without medial black patch on costa ..... *vesta.*

3609. Leuconycta diphteroides.

Microcœlia diphteroides, Guen. Noct. i. p. 34, pl. 3. f. 7 (1852); Grote, Proc. Ent. Soc. Phil. iii. p. 78, pl. 2. f. 2; id. Trans. Am. Ent. Soc. ii. p. 195, pl. 3. f. 69; Smith, Cat. Noct. N. Am. p. 48.
Microcœlia obliterata, Grote, Proc. Ent. Soc. Phil. iii. p. 79 (1864); id. Trans. Am. Ent. Soc. ii. p. 195, pl. 3. f. 70.

Head and thorax pale green mixed with white, the head with some brown scales; palpi ochreous banded with brown; antennæ brown; tegulæ edged with brown; prothoracic crest red-brown at base; patagia and metathoracic crests tipped with black; pectus and legs whitish tinged with ochreous, the tibiæ and tarsi dark brown, the latter ringed with white; abdomen white irrorated with black, the ventral surface tinged with ochreous. Fore wing very pale green irrorated with white; subbasal line double, waved, black, interrupted below costa and above inner margin, a triangular black spot beyond it on costa; antemedial line double, black, oblique, waved, strongly angled inwards on vein 1; claviform defined by black; orbicular and reniform with white annuli defined by black, the former elliptical, the latter open above, its centre defined by blackish on outer side and below, a black fascia

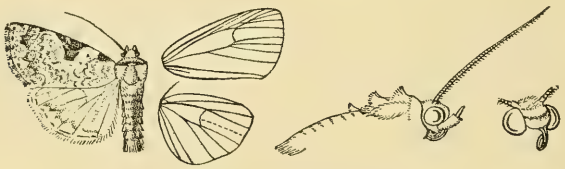


Fig. 8.—*Leuconycta diphteroides*, ♂. ½.

between them above median nervure, with a blackish shade above it from costa; a slight waved line from below reniform to inner margin; postmedial line double filled in with white, strongly bent outwards below costa, then lunulate and with black points beyond it on the veins, oblique below vein 4, some black and white points beyond it on costa; subterminal line slight, white, defined on inner side by dentate black marks, waved, incurved at discal and submedian folds; a terminal series of minute black lunules slightly defined by white on inner side; cilia chequered blackish and white and with blackish line through them. Hind wing white slightly irrorated with fuscous; a slight discoidal point, traces of dentate postmedial and subterminal lines and a terminal series of black striæ; the underside white tinged with rufous, especially on the veins and costal area, a black discoidal spot and indistinct sinuous postmedial line.

Ab. 1. *obliterata*. Fore wing with the black markings defining the postmedial and subterminal lines almost obsolete.

Hab. Canada; U.S.A., Massachusetts (*Burg*), 2 ♂, 2 ♀, New York (*Packard*), 1 ♂, Evans Center (*Grote*), 3 ♂, 5 ♀, Trenton Falls (*Doubleday*), 1 ♂, 1 ♀ type, Pennsylvania, Pittsburgh (*Engel*), 1 ♀, Wisconsin, Virginia, Iowa, Missouri, Kansas. *Exp.* 34–40 millim.

Larva. Dyar, Can. Ent. xxx. p. 16.

Cylindrical, green, smooth, the setæ very fine and single; dorsal and subdorsal lines white, narrow, with waved edges; tubercles i and ii with white points; a pinkish-red stigmatal line edged with white below, distinct at extremities only.

*3610. Leuconycta vesta. (Plate CXXIII. fig. 26.)

Microcœlia vesta, Schaus, Trans. Am. Ent. Soc. xxi. p. 223 (1894).

♂. Head and thorax white; palpi black-brown except at tips; sides of frons black-brown; antennæ brown except at base; pectus and legs tinged with red-brown; abdomen white suffused with brown, leaving white dorsal segmental lines. Fore wing silvery white faintly tinged in parts with red-brown; a triangular black subbasal spot on costa; antemedial line very indistinct, oblique, waved, with brown point in cell and black point in submedian fold; orbicular defined by black on outer side, the reniform on inner side and with a black fascia between them in cell, otherwise undefined; postmedial line represented by a triangular black spot on costa and traces of an oblique waved line with some black points on it from vein 4 to inner margin; three small black spots on postmedial part of costa; subterminal line very indistinct, white faintly defined on inner side by brownish, excurved below vein 7 and at middle; a terminal series of black striæ; cilia chequered brownish and white. Hind wing white tinged with red-brown; a terminal series of brown striæ from apex to vein 2 slightly defined by white on inner side; cilia white; the underside tinged and irrorated with red-brown, a black discoidal point and terminal series of striæ.

Hab. Mexico (*Schaus*), type† ♂ in U.S. Nat. Mus. *Exp.* 36 millim.

Genus AGRIOPODES, nov.

Type, *A. fallax*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and moderately fringed with hair, the 3rd moderate; frons smooth; eyes large, round; antennæ ciliated; thorax clothed chiefly with rough scales and without distinct crests; tibiæ moderately fringed with hair; abdomen with some rough hair at base and large basal crest. Fore wing with the apex rounded, the termen evenly curved and slightly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with prominent wedge-shaped black marks before postmedial line in discal and submedian folds.
  a. Fore wing without subterminal series of dentate black marks ..... *fallax.*
  b. Fore wing with subterminal series of dentate black marks... *geminata.*
B. Fore wing without prominent wedge-shaped black marks before postmedial line in discal and submedian fold.
  a. Fore wing without black medial shade ..... *tybo.*
  b. Fore wing with prominent black medial shade ..... *viridata.*

3611. Agriopodes fallax.

Moma fallax, Herr.-Schäff. Aussereur. Schmett. p. 80, f. 211 (1853); Smith, Cat. Noct. N. Am. p. 34.

Head and thorax pale blue-green; palpi white with black patches on 1st and 2nd joints and the tip of 3rd joint black; sides of frons black; antennæ black with some white at base of shaft; tegulæ with some black on edges; tips of patagia black; tibiæ streaked with black, the tarsi banded with black; abdomen white dorsally suffused with fuscous, ventrally irrorated with black and with black patch at extremity. Fore wing emerald-green, the costal edge white; a subbasal black spot on costa; a short black streak in base of submedian fold; an antemedial black spot on costa and irregular patch in submedian interspace emitting spurs

Fig. 9.—*Agriopodes fallax*, ♂. ½.

into cell and on outer side in submedian fold; orbicular represented by a slight black bar, the reniform by a quadrate spot with oblique black bar from costa to it; a slight black striga on middle of inner margin and slightly incurved line from lower angle of cell to inner margin; postmedial line represented by a small black spot on costa, a black line much nearer termen from vein 7 emitting a streak in discal fold towards cell, incurved below vein 4 and forming a large triangular patch between veins 3 and 1, with its apex extending almost to medial line, and a point on inner margin, some black points beyond it on costa and an oblique bar before apex; faint traces of a whitish subterminal line with a few black scales on it, excurved at middle, then incurved; cilia intersected by black streaks extending to termen below veins 6 and 2. Hind wing whitish slightly suffused with brown, an indistinct discoidal spot; cilia chequered black and white; the underside

white tinged with brown and irrorated with black, a black discoidal lunule, diffused postmedial line, and terminal series of black lunules.

Hab. Canada; U.S.A., New York, 4 ♀, Distr. of Columbia, Illinois, Tennessee, Texas. *Exp.* 36–42 millim.

Larva. Head green, wrinkled, black-dotted on the edge. Body stout, much tapered posteriorly, velvety green with dorsal and subdorsal narrow white lines; tubercles with numerous hairs but very minute, imperceptible. Food-plant, *Viburnum*.—H. G. D.

3612. **Agriopodes geminata.** (Plate CXXIII. fig. 27.)

Moma geminata, Smith, J. N.Y. Ent. Soc. xi. p. 1 (1903).

♂. Head and thorax malachite-green mixed with some white and black scales; palpi white with black spots at sides of 2nd and 3rd joints; frons white; antennæ black, the shaft white above towards base; tegulæ with some black scales at middle and a slight black line with two points on it near tips; metathorax with two black spots; pectus and legs white, the tibiæ and tarsi with black spots; abdomen white suffused with fuscous except at base, the basal crest black at tip. Fore wing malachite-green mixed with some white and slightly irrorated with black; a black spot at base; subbasal black bar from costa and small wedge-shaped spot above vein 1 with slight spot below it on inner margin; antemedial line with two black bars from costa, an obliquely curved mark from middle of cell to submedian fold with oblique mark beyond it below the cell, then indistinct, double and incurved at vein 1; orbicular and reniform defined by black at sides and with square black spot between them, the former rounded; a black bar from middle of costa to reniform, incurved below costa, and an incurved line from lower angle of cell to inner margin somewhat interrupted at submedian fold; postmedial line double at costa, incurved at discal fold and below vein 4 and with short black streaks from its inner side at discal and submedian folds, some black points beyond it on costa with short white streaks between them; subterminal line represented by an oblique black bar from costa, then by a series of small dentate black marks; a terminal series of small black spots with larger spots at discal and submedian folds; cilia greenish white intersected with black. Hind wing greenish white, the terminal area tinged with fuscous from apex to submedian fold; a faint discoidal point and sinuous postmedial line; the termen white; a series of small black spots on termen and cilia; the underside white, the costal half irrorated with a few black scales, a black spot on middle of costa and discoidal spot, postmedial line faint, bent outwards below costa then crenulate, a terminal series of black striæ.

Hab. Canada, Manitoba, Cartwright (*Heath*), 1 ♂. *Exp.* 40 millim.

3613. Agriopodes tybo. (Plate CXXIII. fig. 28.)

Moma tybo, Barnes, Can. Ent. xxxvi. p. 166 (1904).

♀. Head white with a few black scales; palpi mostly black on outer side except towards tips; thorax pale blue-green, the tegulæ with black scales at tips towards middle; pectus and legs white, the tarsi banded with black; abdomen white dorsally suffused with fuscous, leaving white segmental lines and the basal crest white. Fore wing pale blue-green irrorated with a few black scales; subbasal line represented by black striæ from costa and cell; a black streak in submedian fold from base to antemedial line expanding into a spot at base; antemedial line black, double at costa, oblique, strongly excurved in cell and above inner margin and incurved in submedian interspace; claviform represented by a small black spot at its extremity; orbicular and reniform large, defined by black, the former round, with a broad black bar above it from costa and a waved line from it to inner margin, the reniform incompletely defined; a black striga in submedian fold below the reniform; postmedial line bent outwards below costa, incurved at discal fold, slightly dentate at veins 4, 3, then strongly incurved, indistinctly double beyond the cell, some white points with short black streaks between them beyond it on costa and an incomplete waved diffused black line representing the inner edge of subterminal line with black spots on it at discal and submedian folds, incurved below vein 3; a terminal series of prominent black lunules; cilia chequered black and white. Hind wing white irrorated and suffused with fuscous, especially on costal half of terminal area; an indistinct discoidal point and sinuous postmedial line; a terminal series of black striæ; the underside white, the costal area tinged with ochreous and the costal and terminal areas to vein 4 irrorated with black, a diffused blackish medial line incurved and indistinct below middle of cell, a black discoidal spot and diffused postmedial line incurved below vein 3, and terminal series of black lunules.

Hab. U.S.A., Arizona (*Poling*), 1 ♀ cotype. *Exp.* 38 millim.

3614. Agriopodes viridata. (Plate CXXIII. fig. 29.)

Jaspidea viridata, Harv. Can. Ent. viii. p. 35 (1876); Smith, Cat. Noct. N. Am. p. 49.

♂. Head and thorax pale green with a few dark scales; palpi black except at tips; frons with lateral black marks; antennæ blackish; tarsi banded with black; abdomen white irrorated with black-brown. Fore wing pale green irrorated with a few black scales: a waved black subbasal line from costa to vein 1; antemedial line rather diffused, black, very oblique, strongly angled outwards in the interspaces and inwards on the veins; orbicular and reniform with white annuli defined by black, the former round with some black in lower part of centre, the latter strongly constricted at middle; a diffused black medial band, oblique from

costa to median nervure, then inwardly oblique and conjoined at inner margin to antemedial line; postmedial line rather indistinct, slightly bent outwards below costa, then waved, incurved below vein 4; postmedial area suffused with black except between veins 6 and 5 and with some white points on costa; subterminal line obsolete towards costa, dentate at middle and angled inwards at discal and submedian folds; a terminal series of small black lunules; cilia green intersected with black. Hind wing white; a black discoidal spot; an indistinct minutely waved postmedial line and faint diffused subterminal line; a lunulate black terminal line; the underside with the costal area irrorated with fuscous, an antemedial band of diffused black scales, large discoidal black spot, rather diffused postmedial line excurved to vein 4, then oblique, and terminal patches of dark irroration at apex, middle, and submedian interspace.

Hab. U.S.A., S. California, 1 ♂. *Exp.* 30 millim.

Genus **POLIONYCTA**, nov.

Type, *P. apicata.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching vertex of head and smoothly scaled, the 3rd long; frons smooth; eyes large, rounded; antennæ of female nearly simple; head and thorax clothed chiefly with scales and without crests; tibiæ slightly fringed with hair; abdomen with dorsal crest at base only. Fore wing broad, triangular, the apex rounded, the termen crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with cell near base only.

3615. **Polionycta apicata**, n. sp.

♀. Head and tegulæ grey suffused with red-brown, thorax grey slightly tinged with brown; fore and mid tarsi banded with black; abdomen grey-brown with pale rufous segmental lines. Fore wing silvery grey irrorated with pale brown and slightly

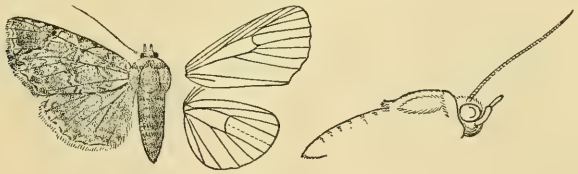


Fig. 10.—*Polionycta apicata*, ♀. ½.

tinged with rufous in parts, a triangular brown patch on middle of costa and the apical area suffused with brown to vein 4; antemedial line double, rufous, irregularly waved; orbicular represented by a minute rufous annulus; reniform large, defined by brown, its centre tinged with brown, constricted at middle, its lower extremity produced and acute; postmedial line double, very oblique and slightly sinuous from costa to vein 4 near termen, then inwardly

dentate and oblique to vein 2, then retracted to below angle of cell and waved to inner margin, some whitish and black striæ beyond it on costa; subterminal line indistinct, pale, waved, excurved below vein 7 and at middle, slight black marks beyond it above and below vein 4: a fine waved black terminal line. Hind wing cupreous brown, deepening towards termen, on which there is a series of grey lunules on inner side of the fine waved black terminal line; cilia grey and brown; the underside grey irrorated with brown, a discoidal spot, crenulate postmedial line, and diffused subterminal line extending to termen towards apex.

Hab. Panama, Obispo (*Salvin*), 1 ♀ type. *Exp.* 44 millim.

Genus **THALATHA.**

Type.

Thalatha, Wlk. Journ. Linn. Soc., Zool. vi. p. 187 (1862)..... *sinens.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and moderately fringed with hair in front, the 3rd moderate; frons with very small corneous prominence at middle with raised edges; eyes large, round; antennæ laminate or uniserrate; thorax clothed chiefly with scales and without crests; tibiæ moderately fringed with hair; abdomen with dorsal crest at base only. Fore wing with the apex typically rounded, the termen evenly curved and very slightly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 shortly stalked or from angle; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male with uniseriate serrations.

3616. **Thalatha malagassica**, n. sp.

♂. Head and thorax white slightly tinged with rufous; palpi fulvous red with some black above; antennæ, tegulæ, and patagia fulvous red; pectus and legs fulvous red, the mid tibiæ with black spot at middle and the tarsus with black spot on basal joint;

Fig. 11.—*Thalatha malagassica*, ♂. ½.

abdomen ochreous white. Fore wing white irrorated with fulvous, the submedian interspace suffused with fulvous except just before antemedial and beyond postmedial lines, a fulvous band from middle of costa to vein 2 and a patch on costa towards apex; a diffused black fascia in submedian fold from base to before antemedial line, from it to postmedial line, and from beyond postmedial line to termen; antemedial line represented by a black point on

costa, black bar from cell to vein 1, and fulvous line angled outwards above inner margin; orbicular and reniform large, white, the former defined by black at sides, rather elongate elliptical, the latter defined by diffused black on inner side and by a few black scales on outer, with slight fulvous lunule in centre; postmedial line fulvous with a few black scales on it and strong black lunule in submedian interspace, bent outwards below costa, then dentate, excurved to vein 4, then strongly incurved, some white points beyond it on the costal fulvous patch; subterminal line slight, fulvous, waved, angled inwards in discal fold and with black spot beyond it to near termen: a terminal series of slight fulvous lunules; cilia chequered fulvous yellow and white. Hind wing white faintly tinged with yellow, especially on inner area; a fine yellow terminal line and line through the cilia; the underside with faint traces of curved postmedial line.

Hab. Madagascar, Betsileo (*Cowan*), 1 ♂ type. *Exp.* 44 millim.

Sect. II. Antennæ of male laminate.

A. Fore wing of male with the apex somewhat produced and acute.
  a. Fore wing with the subbasal mark in submedian interspace wedge-shaped ..... *dinava*.
  b. Fore wing with the subbasal mark in submedian interspace a minute lunule.
    a[1]. Fore wing slightly suffused with green, the black fascia on terminal area strong ..... *eceicei*.
    b[1]. Fore wing strongly suffused with green, the black fascia on terminal area slight ..... *psorallina*.

3617. Thalatha dinava.

Acronycta dinawa, Beth.-Baker, Nov. Zool. xiii. p. 198 (1906).

♂. Head and thorax white mixed with reddish brown; palpi black except at tips; frons with lateral black spots; tegulæ with black band at base; pectus and legs mostly red-brown, the tibiæ banded with black, the tarsi black; abdomen white irrorated with

Fig. 12.—*Thalatha dinava*, ♂. ½.

red-brown and suffused with black towards extremity, the 1st segment with pair of dorsal black points, the 2nd and 3rd with slight black bars, the ventral surface thickly irrorated with rufous. Fore wing white suffused with grey-green and irrorated with fuscous; subbasal line very indistinct, double, waved, from costa to vein 1, a blackish spot beyond it on costa and a small wedge-shaped

black mark below submedian fold; antemedial line very indistinct, double, waved, oblique; orbicular and reniform slightly defined by fuscous, the former round; an oblique sinuous medial line with diffused brown patch beyond it on costa and greenish patch in cell an oblique irregular black fascia with grey below it in submedian fold from medial to subterminal line; postmedial line very indistinct and interrupted, black below costa and between veins 6 and 4, with small black spot at costa, bent outwards below costa, incurved and slightly waved below vein 4; an indistinct diffused dark subterminal line, excurved below costa and at middle and angled outwards above vein 1, with black streak from it below vein 2 intersecting the cilia; some diffused brown just before termen from apex to vein 4 and towards tornus; cilia red-brown; the apex somewhat acute in male. Hind wing white; the veins brownish; the apical area purplish brown from middle of costa and down to vein 2, in female wholly suffused with brown; the underside with the costal area irrorated and suffused with rufous, a dark patch at middle of costa, slight discoidal spot, and diffused waved postmedial line excurved below costa and at middle.

Hab. Br. New Guinea, Dinawa (*Pratt*), type † ♂ in Coll. Bethune-Baker, Mt. Kebea (*Pratt*), Ekeikei (*Pratt*), 1 ♂. *Exp.* 38–42 millim.

3618. **Thalatha eceicei.** (Plate CXXIII. fig. 30.)

Acronycta ekeikei, Beth.-Baker, Nov. Zool. xiii. p. 198 (1906).

♂. Head and thorax white mixed with yellow-green; palpi black-brown, white at extremity of 2nd joint; frons with lateral black-brown bars; antennæ blackish except at base; pectus and legs mixed with rufous and black-brown, the tarsi black ringed with white; abdomen whitish mixed with deep rufous and black, the ventral surface almost entirely deep rufous. Fore wing white mixed with pale yellow-green; a subbasal blackish striga from costa and point on median nervure with black patch beyond it on costa and minute fiery-red lunule above vein 1; antemedial line with black points on costa, then very indistinct, greenish, oblique, sinuous; orbicular and reniform very slightly defined by blackish, the former round, open above and below, the latter with greenish centre and white annulus; an erect greenish medial band expanding into a triangular patch on costa, obscuring the outer part of orbicular; postmedial line very indistinctly double filled in with white, almost obsolete and strongly bent outwards below costa, then lunulate with black striæ on its outer edge, incurved below vein 4, with alternating white and black points beyond it on costa, crossed by an oblique irregular black fascia in submedian interspace from medial band to termen before which it is interrupted; a very ill-defined lunulate white subterminal band, angled outwards at vein 7, excurved at middle and bent outwards to tornus; a terminal series of black striæ defined on inner side by white lunules; cilia white with slight blackish line through them and

some black at tips. Hind wing white, the medial veins brown, the apical area and terminal area to vein 2 broadly suffused with purple-brown; cilia white with brown line through them towards apex. Underside of fore wing deep rufous with white streaks from base, fascia on inner margin and wedge-shaped marks on termen from vein 5 to tornus; hind wing with the costal and apical areas rufous, a dark bar from middle of costa, spot at upper angle of cell, and sinuous postmedial line bent outwards below costa and excurved at middle.

♀. Fore wing with the subbasal lunule below submedian fold black; hind wing nearly uniformly suffused with purple-brown.

Hab. Br. N. Guinea, Ekeikei (*Pratt*), 1 ♀, Mt. Kebea (*Pratt*), 1 ♂. *Exp.* ♂ 38, ♀ 42 millim. Type † ♂ in Coll. Bethune-Baker.

3619. **Thalatha psorallina.** (Plate CXXIII. fig. 31.)

Acronycta psorallina, Lower, Tr. R. Soc. S. Austr. xxvii. p. 31 (1903).

♂. Head and thorax white mixed with pale yellow-green, the latter with a rufous shade on dorsum; palpi black-brown except at extremity of 2nd joint; frons with lateral black bars; antennæ blackish except at base; pectus and legs largely mixed with deep rufous, the tarsi black tinged with white; abdomen white suffused with blackish towards extremity, the ventral surface deep rufous mixed with black and with white bar on penultimate segment. Fore wing white mostly suffused with pale yellow-green; subbasal line represented by a dark striga from costa and point on median nervure, with black spot beyond it on costa and minute fiery-red lunule above vein 1; antemedial line with black point at costa, then double, greenish, waved; orbicular and reniform slightly defined by blackish, the former round, the latter with greenish centre and white annulus; a strong green shade from middle of costa to median nervure obscuring the outer part of orbicular, traversed by the double waved medial line which is blackish towards costa, greenish below the cell; postmedial line double filled in with white, with black spots at costa, then green with black striæ on it, bent outwards below costa, then minutely waved, excurved to vein 4, then incurved, with alternating black and white marks beyond it on costa, crossed by an oblique black streak in submedian fold from medial line to termen before which it is interrupted; subterminal line indistinct, white, waved, excurved below vein 7 and at middle, angled inwards in submedian fold and bent outwards to tornus; a terminal series of green striæ with white lunules before them; cilia white with slight black lunules at middle and tips. Hind wing white, the apical area suffused with pale rufous; cilia white, rufous at apex. Underside of fore wing rufous with white streak below base of costa, white fascia on inner margin, some white spots on costa beyond middle and dentate marks on termen below veins 4 and 3; hind wing with the costal

area except at base and apical area rufous, a dark bar from costa before middle, discoidal point and sinuous postmedial line.

♀. Fore wing with the subbasal lunule below submedian fold black; hind wing tinged with rufous, the whole terminal area suffused with rufous except at tornus.

Hab. Queensland, Kuranda (*Dodd*), 1 ♂, 1 ♀. *Exp.* ♂ 34, ♀ 36 millim.

B. Fore wing of male with the apex rounded.
  a. Fore wing with the ground-colour olive-green ..... *cebeæ*.
  b. Fore wing with the ground-colour white.
    a^1. Fore wing without triangular black patch on middle of inner margin.
      a^2. Fore wing with terminal series of small black spots ..... *conjecturalis*.
      b^2. Fore wing with terminal series of slight dark striæ. *sinens*.
    b^1. Fore wing with triangular black patch on middle of inner margin ..... *melaleuca*.

*3620. Thalatha cebeæ. (Plate CXXIII. fig. 32.)

Dipthera kebeæ, Beth.-Baker, Nov. Zool. xiii. p. 203 (1906).

♂. Head and thorax olive-green; palpi black, the extremities of 2nd and 3rd joints ochreous; antennæ brown except at base; tegulæ with black line at base; patagia edged with black-brown except on inner side towards base; prothorax with two black-brown spots, metathoracic crest black-brown at tip; pectus and legs ochreous mixed with black-brown, the tibiæ and tarsi black banded with ochreous white: abdomen ochreous suffused with rufous, the crests blackish. Fore wing olive-green; costal edge whitish; a black spot at base of costa and oblique wedge-shaped black mark above vein 1 emitting teeth from upper side at middle and extremity; a subbasal black point on costa followed by a small triangular spot; a whitish fascia in submedian fold from the basal black mark to postmedial line; an antemedial black point on costa and two on inner margin with faint traces of an oblique line between them; orbicular with slight white annulus, round, followed by a quadrate black spot before the reniform, which is represented by a faint whitish bar on its inner side and some whitish points with black points on their outer side; an oblique black bar from middle of costa and a sinuous line from cell to inner margin with triangular spot beyond it above vein 1; postmedial line represented by a black spot on costa and some white points from vein 6 to inner margin strongly incurved below vein 4 and with black bars on their outer side between veins 6 and 4 and in submedian interspace, some black spots beyond it on costa; subterminal line represented by an oblique black bar from costa, then by a series of whitish points excurved below vein 7 and at middle, incurved in submedian interspace and with slight black spots before it above and below vein 5; cilia chequered black, rufous and white. Hind wing white, the veins and terminal area

tinged with rufous; a brownish postmedial spot below vein 6; cilia chequered rufous and white; the underside with the costal and apical areas suffused with rufous and irrorated with dark brown, a diffused blackish bar from middle of costa, a brown discoidal spot and diffused sinuous postmedial line.

Hab. Br. N. Guinea, Mt. Kebea (*Pratt*), type † ♂ in Coll. Bethune-Baker. *Exp.* 42 millim.

3621. Thalatha conjecturalis.

Thalatha sinens, Wlk. Journ. Linn. Soc., Zool. vi. p. 187 (1862), var. nec 1856.
Bryophila conjecturalis, Swinh. Trans. Ent. Soc. 1890, p. 222, pl. vii. f. 10; Hmpsn. Moths Ind. ii. p. 242.

Head and thorax white, the head and tegulæ mixed with pale rufous; palpi with black point at extremity of 2nd joint; frons with black lateral spots; tegulæ with black dorsal point; patagia with blackish outer edge; metathorax with paired black points; pectus and legs tinged with reddish brown, the tarsi banded with blackish; abdomen white tinged with red-brown, the basal crest black at tip. Fore wing pure silvery white slightly irrorated with reddish brown; a blackish subbasal spot on costa; a black fascia diffused below, curved from base of costa to below cell, then up to median nervure at antemedial line, which is indistinct, brown, double, waved, oblique; an obliquely curved medial black line with diffused brown band beyond it from costa to vein 1, a strong oblique black fascia from it to outer edge of postmedial line in submedian fold; reniform represented by a slight dark lunule on the black band; postmedial line double, the lines rather widely separated, the outer line with series of black points on it, bent outwards below costa, then minutely waved, incurved below vein 3, some dark points beyond it on costa and a brownish bar from costa; an indistinct irregularly waved brownish line representing the inner edge of subterminal line from the brown bar to submedian fold and some brownish marks on the outer edge of the line; a terminal series of small black spots and a wedge-shaped spot in submedian fold; cilia chequered brown and white. Hind wing white suffused with brown; a terminal series of slight dark lunules; cilia white with series of pale brown spots; the underside white tinged with red-brown, a brown discoidal lunule, slightly waved curved postmedial line, and terminal series of slight lunules.

Ab. 1. Fore wing with the medial band extending from costa to reniform only.—Borneo.

Hab. Bombay, N. Kanara, Karwar (*Bell*), 1 ♀; Burma, Rangoon, 1 ♀ type; Borneo, Sarawak, Sandakan (*Pryer*), 1 ♂. *Exp.* 32–36 millim.

3622. Thalatha sinens.

Orthosia sinens, Wlk. xi. 746 (1857); Hmpsn. Ill. Het. B. M. viii. p. 71, pl. 144. f. 6; id. Moths Ind. ii. p. 241.

Head and thorax pure white, the tegulæ and patagia with some pale rufous scales; palpi black except at tips; tarsi banded with black-brown; abdomen white suffused with brown. Fore wing pure white faintly irrorated with pale brown on basal and inner areas; an obliquely curved interrupted black fascia from base of costa to submedian fold before antemedial line, which is indistinct, pale brown, oblique, slightly waved, and with double brown spots at costa; a diffused brownish triangular patch from middle of costa to median nervure; reniform very faintly and incompletely defined by pale brown, small; postmedial line very indistinct and incomplete, double, the lines widely separated and with two black points on costa, bent outwards below costa, then waved, incurved

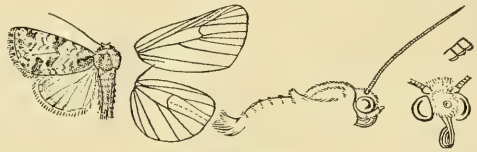


Fig. 13.—*Thalatha sinens*, ♂. ½.

below vein 3, crossed by a diffused oblique brown fascia in submedian fold from well before it to subterminal line, with oblique black striga above it before postmedial line and triangular spot beyond it, two black points with a brown bar from them beyond it on costa; an indistinct diffused waved brown line representing the inner edge of subterminal line which has some slight brown marks on its outer edge; a terminal series of slight dark striæ and a wedge-shaped black spot at vein 2; cilia chequered brown and white. Hind wing white suffused with red-brown; a black spot on termen at vein 2; cilia white; the underside white, the costal area suffused and irrorated with red-brown, a slight discoidal lunule and diffused sinuous postmedial line.

Ab. 1. Fore wing with the markings grey-green, the striga before postmedial line developed into an irregular fascia from just before medial line to the spot on outer edge of postmedial line.

Hab. W. China, Chia-kou-ho (*Pratt*), 1 ♀; Bombay, N. Kanara, Karwar (*Bell*), 1 ♀; Madras, Nilgiris (*Hampson*), 1 ♂; Travancore, Trevandrum (*Fergusson*), 1 ♀; Burma, Moulmein (*Clerk*), 1 ♀ type. *Exp.* 30–36 millim.

*3623. Thalatha melaleuca, n. n. (Plate CXXIV. fig. 2.)

Tarache kebeæ, Beth.-Baker, Nov. Zool. xiii. p. 208 (1906), nec *Dipthera kebeæ*, p. 203.

♀. Head and thorax white; palpi black except at tips; lower part of frons black; antennæ black except at base; tegulæ black

at middle and with black patches at tips; patagia with black patches on outer edge; pectus and legs black and white, the tarsi slightly ringed with white; abdomen fuscous, whitish at base, the crests black, the anal tuft white, the ventral surface black with large white patch at middle. Fore wing pure white; an irregular black fascia below base of cell, arising from costa at base; a subbasal black point on costa followed by a triangular patch; a triangular black patch on middle of costa extending to lower angle of cell and another on inner margin extending to submedian fold; a small postmedial black spot on costa and point on inner margin, a broad black bar from apex to discal fold with white point on costa, rather bifid below and connected with a triangular black patch from termen below apex with black point above it on termen; a broad oblique black bar from vein 2 to tornus widely forked above; two black points on termen below middle; cilia white, black at the black markings. Hind wing fuscous, the inner area whitish; cilia black from apex to vein 5, then white; the underside black, the base white except costal area, the inner area white, its upper edge expanding into a whitish patch beyond middle.

Hab. Br. N. Guinea, Mt. Kebea (*Pratt*), type † ♀ in Coll. Bethune-Baker. *Exp.* 32 millim.

Genus **GOENYCTA**, nov.

Type, *G. niveiguttata.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching to middle of frons and moderately fringed with hair in front, the 3rd short; frons with rounded prominence with corneous plate below it; eyes large, round; antennæ of female ciliated; thorax smoothly clothed with scales only and without crests; tibiæ moderately fringed with hair; abdomen with dorsal series of crests, the crests on segments 3, 4, 5 large. Fore wing rather narrow, the margins subparallel, the apex rounded, the termen slightly excurved at middle and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

3624. Goenycta niveiguttata.

Erastria niveiguttata, Hmpsn. J. Bomb. Nat. Hist. Soc. xiv. p. 205 (1902).

♀. Head white; palpi black, the extremities of 2nd and 3rd joints white; frons with triangular black patch on lower part with two points above it; antennæ black except basal joint; thorax black with white patch on metathorax; pectus and legs white, the fore and mid tibiæ and the 1st joint of tarsi banded with black; abdomen white slightly tinged with fuscous, the crests black. Fore wing black with irregular white subbasal, antemedial and postmedial patches on costal area with black points on them representing the lines and conical white ante- and postmedial patches on inner margin; a white point on costa before the postmedial patch and two towards apex; subterminal line represented

by an angled white striga from costa, striæ on termen below veins 7 and 5 and one at tornus with a few white scales between them; cilia with a fine white line at base. Hind wing white tinged with fuscous especially on terminal area; cilia with a fine white line at

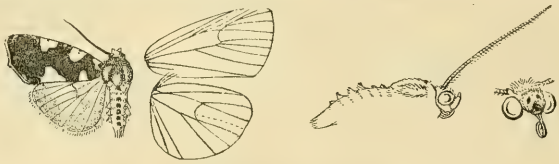


Fig. 14.—*Goenycta niveiguttata*, ♀. ½.

base; the underside white, a fuscous bar from middle of costa with traces of a band from it to inner margin, traces of a band from middle of discocellulars to inner margin, excurved beyond lower angle of cell, an apical fuscous patch.

Hab. Sikhim, 1800′ (*Dudgeon*), 1 ♀ type. *Exp.* 34 millim.

Genus **TYCRACONA.**

Type.

Tycracona, Moore, Lep. Atk. p. 95 (1882) ..... *obliqua.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching to about vertex of head and moderately scaled, the 3rd porrect, short; frons with small rounded prominence at middle; eyes large, round; antennæ laminate; thorax clothed almost entirely with scales and without crests; tibiæ moderately fringed with hair; abdomen with dorsal crest at base only. Fore wing triangular, the apex rounded, the termen evenly curved and slightly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only, the termen strongly curved.

3625. Tycracona obliqua.

Tycracona obliqua, Moore, Lep. Atk. p. 95 (1882); Waterhouse, Aid, ii. pl. 118; Hmpsn. Moths Ind. ii. p. 243.

Head red-brown; tegulæ red-brown with white tips; thorax grey-white with some red-brown on prothorax and base of patagia; legs brown, the tarsi ringed with whitish; abdomen grey suffused with reddish brown. Fore wing grey-white thickly irrorated with brown, the terminal area suffused with red-brown; some red-brown on costa towards base and a slight subbasal streak on subcostal nervure with point below it on median nervure; antemedial line very indistinct, double, waved, slightly angled inwards below costa; orbicular defined by brown, minute, round; reniform a narrow white lunule slightly defined by brown; an oblique black-brown band from costa to vein 5 on outer edge of reniform with a black fascia from it above vein 4 to near termen; postmedial line rather indistinct, bent outwards below costa, then minutely dentate, excurved to vein 4, then incurved; some white points beyond it on costa, defined by whitish on outer side in submedian interspace

and with slight dark streak in submedian fold from beyond it to termen; an indistinct rather diffused brown subterminal line excurved at middle and with slight dark streaks beyond it in the interspaces; a terminal series of slight dark striæ with dark marks

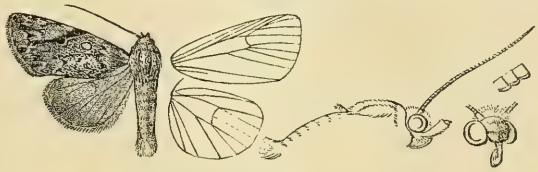


Fig. 15.—*Tycracona obliqua*, ♂. ½.

beyond them on the cilia. Hind wing greyish brown with very indistinct diffused subterminal band; the underside white slightly tinged with brown, a blackish discoidal bar, minutely waved brown postmedial line oblique from costa to vein 5, and brown terminal band narrowing to apex and vein 1.

Hab. Sikhim (*Dudgeon, Pilcher*), 2 ♂; Bhután (*Dudgeon*), 1 ♀; Assam (*Badgley*), 2 ♂, 2 ♀. *Exp.* 40–44 millim.

Genus CRANIOPHORA.

	Type.
Craniophora, Snell. Vlind. van Ned. p. 262 (1872)	*ligustri.*
Bisulcia, Chapman, Ent. Rec. i. p. 28 (1890)	*ligustri.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and moderately fringed with hair in front, the 3rd short; frons smooth; eyes large, round; antennæ simple and laminate in both sexes; thorax clothed with scales mixed with some hair, the prothorax without crest, the metathorax with divided crest; tibiæ moderately fringed with hair; abdomen with dorsal series of crests and rough hair at base. Fore wing with the apex rounded, the termen evenly curved and slightly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with prominent black fascia in submedian fold extending to termen.
  a. Fore wing with the claviform large, defined by black ..... *nigrivitta.*
  b. Fore wing with the claviform absent ..... *fasciata.*
B. Fore wing without prominent black fascia in submedian fold.
  a. Fore wing with the ground-colour purplish grey.
    a^1. Fore wing with oblique white mark in submedian interspace before medial line ..... *albonigra.*
    b^1. Fore wing without white mark in submedian interspace before medial line..... *præclara.*
  b. Fore wing red-brown suffused with purplish fuscous ..... *nubilata.*
  c. Fore wing with the ground-colour grey-white.
    a^1. Hind wing white, the terminal area slightly tinged with brown..... *pontica.*
    b^1. Hind wing uniform brown ..... *paragrapha.*
  d. Fore wing red-brown with white patch beyond the cell ... *ligustri.*
  e. Fore wing almost wholly suffused with black-brown ..... *obscura.*

3626. Craniophora nigrivitta.

Hyboma nigrivitta, Hmpsn. Ill. Het. B. M. viii. p. 72, pl. 144. f. 19 (1891); id. Moths Ind. ii. p. 242.

♂. Head and thorax brown mixed with some whitish; palpi with some blackish scales above; frons with black bar; tegulæ with medial black line with some blackish irroration before it; tibiæ streaked with black; tarsi banded black and whitish; abdomen whitish suffused with brown and with some fuscous on anal tuft. Fore wing greyish suffused with pale brown and slightly irrorated with black; subbasal line represented by double black striæ from costa; a strong sinuous black streak in submedian fold, curved downwards from just before antemedial line to outer edge of claviform, then oblique to termen and cilia; antemedial line double, oblique, waved, angled inwards on vein 1 and to inner margin; claviform defined by black except above, rounded and extending to cell; orbicular and reniform large, defined by black, the former round, the latter with slight brown lunule in centre; an oblique black bar from costa to reniform; postmedial line double, the outer line indistinct, slightly bent outwards below costa, then dentate and produced to black points on the veins, excurved to vein 4, then oblique and angled inwards in submedian fold, a slight black streak in discal fold from it to termen and some black points on costa; the veins of terminal area with slight dark streaks; an indistinct pale waved subterminal line defined on inner side by brown forming somewhat dentate marks; a terminal series of small triangular black spots. Hind wing pale suffused with ochreous brown; the veins brown; the terminal area suffused with fuscous leaving a series of black points on termen defined by slight greyish lunules; cilia ochreous white; the underside ochreous white, the costal area slightly irrorated with brown, a diffused blackish subterminal band.

Hab. Madras, Nilgiris (*Hampson*), 1 ♂ type. *Exp.* 36 millim.

3627. Craniophora fasciata.

Acronycta fasciata, Moore, Lep. Ceyl. iii. p. 5, pl. 144. f. 4 (1884); Hmpsn. Moths Ind. ii. p. 243.
Hyboma divisa, Moore, P. Z. S. 1888, p. 409; Butl. Ill. Het. B. M. vii. p. 45, pl. 125. f. 7.
Acronycta nigrostriata, Pag. Jahrb. Nass. Ver. xli. p. 128 (1889).

Head and thorax grey-white mixed with red-brown; 2nd joint of palpi with black band; frons with black bar; tegulæ with black lines near base and tips; shoulders and outer edge of patagia with black streaks; tibiæ streaked with black, the tarsi banded with black; abdomen reddish brown, the ventral surface whitish except at extremity. Fore wing whitish irrorated with red-brown, the terminal half suffused with red-brown except at inner margin and termen; subbasal line represented by double dark striæ from costa; a black streak in submedian fold from base to the antemedial line with dark brown fascia below it and some black-brown

above it at base; antemedial line double, waved, oblique; orbicular and reniform incompletely defined by black, the former white with red-brown centre, rather elongate elliptical, the latter suffused with red-brown; medial line dark brown, oblique from costa to lower angle of cell, strongly angled inwards in submedian fold and outwards on vein 1, a strong oblique black-brown fascia from it to termen in submedian fold; postmedial line double filled in with whitish, slightly bent outwards below costa, then minutely waved, excurved to vein 4, angled inwards in submedian fold and outwards at vein 1, some whitish points beyond it on costa; an indistinct diffused whitish dentate subterminal line with slight dark streaks beyond it in the interspaces; cilia with a series of slight blackish lunules at tips. Hind wing ochreous white more or less tinged with red-brown, the apical area suffused with red-brown; cilia with a series of brownish marks at tips; the underside with the costal area irrorated with brown, a diffused dark mark on middle of costa, small discoidal spot and traces of postmedial line with dark spots on and below costa and in discal and submedian folds.

Hab. Japan, Nikko (*Ito*), 1 ♀, Yokohama (*Pryer*), 1 ♂; W. China, Chang-yang (*Pratt*), 1 ♀; Kashmir, Scinde Valley (*Leech*), 1 ♀; Punjab, Kulu, Sultanpur (*G. Young*), 2 ♂, 2 ♀, Dharmsála (*Hocking*), 4 ♂, 1 ♀ type *divisa*; Bombay, Kanara, Karwar (*Bell*), 1 ♂; Ceylon, 2 ♂ type; Burma, Rangoon; Amboina; Br. New Guinea, Mt. Kebea (*Pratt*), 1 ♂, 3 ♀, Dinawa (*Pratt*), 1 ♂, Ekeikei (*Pratt*), 1 ♀. *Exp.* 36–48 millim.

3628. **Craniophora albonigra.** (Plate CXXIV. fig. 3.)

Acronicta albonigra, Herz. Ann. Mus. Zool. Ac. Imp. Sci. Pétersb. ix. p. 269, pl. 1. f. 3 (1904).

♂. Head and thorax dark brown mixed with grey-white; 2nd joint of palpi with black band; tegulæ and patagia edged with blackish; tarsi dark brown ringed with white; abdomen red-brown with the dorsal crests blackish. Fore wing violaceous grey suffused and irrorated with brown, the inner half to just beyond antemedial line suffused with black-brown; subbasal line represented by double black striæ from costa and single striga from cell with black streak from it to antemedial line, which is double, oblique, waved, angled inwards in submedian fold and on vein 1; orbicular and reniform defined by black, the former with whitish annulus, round; medial line oblique from costa to median nervure, incurved to submedian fold, then obliquely excurved, defined by whitish on inner side below the cell and with dark suffusion on outer; postmedial line double slightly filled in with whitish towards costa and inner margin, slightly bent outwards below costa, then minutely dentate, excurved to vein 3, then incurved and angled outwards at vein 1, some whitish points beyond it on costa and crossed by an ill-defined blackish streak in submedian fold from medial to subterminal lines; an indistinct pale waved subterminal line, excurved below vein 7

and at middle and angled inwards at discal and submedian folds where there is a whitish lunule on it and dark marks beyond it at discal and submedian folds; a terminal series of slight brown lunules; cilia chequered dark brown and whitish. Hind wing whitish tinged with ochreous, the terminal area suffused with brown from apex to vein 2; a slight discoidal lunule; cilia brownish with pale line at base; the underside grey-white irrorated with brown, a slight dark mark from costa before middle, discoidal spot, and traces of postmedial line with dark spots on and below costa and in discal and submedian folds.

♀. Fore wing with the white before medial line confined to an oblique mark below submedian fold, the subterminal line formed of whitish lunules; hind wing wholly red-brown.

Hab. E. Siberia, Amurland in Coll. Püngeler; W. China, Omei-shan, 1 ♂, Chang-yang (*Pratt*), 1 ♀. *Exp.* 32 millim.

3629. **Craniophora præclara.** (Plate CXXIV. fig. 4.)

Acronycta præclara, Græs. Berl. ent. Zeit. xxxv. p. 74 (1890); Staud. Cat. Lep. pal. p. 134.

♂. Head and thorax purplish grey mixed with fuscous; 2nd joint of palpi with black band; frons with black bars at middle and above; tegulæ with diffused black medial line; shoulders and outer edge of patagia with black stripe; tibiæ and tarsi banded with black; abdomen whitish irrorated with fuscous and dorsally tinged with brown towards base, the crests blackish. Fore wing purplish grey irrorated with fuscous, the basal area suffused with olive-brown, a diffused olive-brown band beyond the medial line and a band beyond postmedial line, some yellow at base of inner margin; subbasal line represented by indistinct double dark striæ from costa and cell; a black streak in submedian fold from base to just before medial line, defined by olive below; antemedial line double, oblique, waved, angled outwards below costa and inwards on vein 1; orbicular and reniform large, with olive centres and whitish annuli defined by blackish, the former round, the latter with rather irregular outline; a double minutely waved medial line, excurved to median nervure, angled inwards in submedian fold and outwards on vein 1; postmedial line double filled in with whitish, bent outwards below costa, then minutely dentate, incurved below vein 3 and angled outwards on vein 1; an obscure interrupted black streak in submedian fold from medial line to termen and a slight streak in discal fold from postmedial line to before termen; some white points on costa on the dark postmedial band; an ill-defined waved whitish subterminal line, angled outwards at vein 7 and excurved at middle; a terminal series of slight black lunules with olive spots beyond them on the cilia. Hind wing whitish uniformly suffused with olive-brown; some indistinct whitish lunules on termen; cilia chequered olive and whitish; the underside whitish, the veins tinged with olive, the costal area

slightly irrorated with fuscous, a dark spot on middle of costa, dark discoidal spot and postmedial spots on and below costa, in discal fold nearer termen and in submedian fold.

Hab. E. Siberia, Amurland, 1 ♂, Ussuri. *Exp.* 48 millim.

3630. Craniophora nubilata. (Plate CXXIV. fig. 5.)

Euplexia nubilata, Hmpsn. Moths Ind. ii. p. 208 (1894).

♂. Head and thorax dark reddish brown tinged with fuscous and mixed with some grey scales; tibiæ and tarsi ringed with whitish; abdomen dark brown mixed with blackish and with some grey hair at base. Fore wing reddish brown suffused with purplish fuscous leaving a browner patch on medial area in and below cell and the terminal area browner; some golden and greenish scales on inner margin near base; subbasal line represented by double black striæ from costa and a diffused oblique streak below cell; antemedial line double, black, oblique, slightly waved, angled inwards on vein 1, then outwards above inner margin; claviform absent; orbicular pale rufous with red-brown centre and indistinctly defined by red-brown, round; reniform a black lunule; a double slightly waved black medial line, oblique from costa to median nervure, then incurved and again oblique to inner margin; postmedial line double, black, strongly bent outwards below costa, then dentate, the outer line less strongly, excurved to vein 3, then incurved; subterminal line pale rufous, diffused, dentate, approximated to postmedial line, angled inwards below vein 3 where there is a small wedge-shaped black spot beyond it; a series of small black spots just before termen on indistinct pale lunules; cilia with a fine pale line at base. Hind wing white, the veins, inner and apical areas suffused with ochreous brown; a diffused postmedial line and subterminal band; the underside with black spot in middle of cell with two spots above it below costa, a discoidal spot and diffused postmedial line incurved below vein 3.

Hab. Sikhim (*Möller*), 1 ♂ type. *Exp.* 46 millim.

3631. Craniophora pontica. (Plate CXXIV. fig. 6.)

Acronycta pontica, Staud. Hor. Soc. Ent. Ross. xiv. p. 364 (1879); Melioransky, Hor. Soc. Ent. Ross. xxxi. p. 239, pl. 7. f. 6; Staud. Cat. Lep. pal. p. 132.

Head and thorax white mixed with black; 2nd joint of palpi with black band; frons with black bar; tegulæ with black medial line and yellowish and black tips; shoulders and outer edge of patagia with black streaks; tibiæ and tarsi banded with black; abdomen white irrorated with fuscous, the crests black. Fore wing grey-white irrorated with fuscous, the basal area and a broad band beyond the medial line suffused with black, extending to termen above tornus; subbasal line represented by double black striæ from

costa and a single striga from cell with slight black streak beyond it in submedian fold; orbicular white defined by black and with brown centre; reniform fulvous yellow defined by black and with slight fuscous lunule on inner side of centre; medial line black, oblique from costa to median nervure, then bent inwards and oblique to inner margin near postmedial line, which is double filled in with grey, bent outwards below costa, excurved to vein 4, then strongly incurved, some white points beyond it on costa; a dentate whitish subterminal line defined by black on outer side, angled inwards in discal and submedian folds; a terminal series of small fuscous spots defined on inner side by a waved whitish line; cilia fuscous intersected with whitish. Hind wing white with some fuscous irroration on terminal area and diffused blackish streaks on the veins of terminal half; the underside with the costal area slightly irrorated with black, a small blackish discoidal spot and faint waved postmedial line incurved below costa and vein 4 and with slight spot in submedian fold.

Hab. Spain, Castile; Russia, Crimea, 1 ♂, 1 ♀; Armenia; Asia Minor, Pontus, Taurus; Kurdistan, Egin. *Exp.* 36 millim.

*3632. Craniophora paragrapha.

Acronycta paragrapha, Feld. Reis. Nov. pl. 100. f. 8 (1874).

♀. Head and thorax whitish mixed with dark brown; palpi with black-brown band on 2nd joint; lower part of frons black-brown, a blackish bar above it; tegulæ with blackish line near base and dorsal patch at tips; tibiæ and tarsi ringed with black; abdomen dark brown, the base, dorsal crests, anal tuft, and ventral surface paler. Fore wing whitish thickly irrorated with dark brown; a diffused brown streak below base of submedian fold expanding into a patch below base of cell; subbasal line represented by double dark striæ from costa; antemedial line double filled in with white, oblique, waved, excurved in cell; orbicular and reniform with brown centres and white annuli defined by dark brown, the former small, round; an oblique brown line from costa to outer edge of orbicular; postmedial line double filled in with white, lunulate, excurved from costa to vein 4, then incurved and below vein 2 bent outwards to near tornus, crossed by a prominent blackish fascia above submedian fold, its lower extremity bent downwards to tornus, some black and white points beyond it on costa; subterminal line white, lunulate, with small wedge-shaped black marks beyond it below costa at discal fold and below vein 2; a lunulate white terminal line intersected by slight black streaks on extremities of the veins; cilia chequered black-brown and white. Hind wing brown, the cilia chequered brown and white; the underside white tinged with brown, a blackish discoidal spot and diffused curved crenulate postmedial line.

Hab. C. Colony, Knysna (*Trimen*), type † ♀ in Coll. Rothschild. *Exp.* 46 millim.

3633. Craniophora ligustri.

Noctua ligustri, Schiff. Wien. Verz. p. 70 (1776); Fabr. Mant. Ins. ii. p. 172 (1787); Esp. Schmett. iv. pl. 119. ff. 1–4; Hübn. Eur. Schmett., Noct. f. 21; Dup. Lép. Fr. vi. p. 256, pl. 89. f. 1; Frr. Beitr. pl. 142; Steph. Ill. Brit. Ent., Haust. iii. p. 38; Staud. Cat. Lep. pal. p. 134.
Noctua litterata, Panz. Syst. Nom. Schäff. Ins. p. 115, pl. 105. ff. 3, 4 (1804).
Noctua coronula, Haw. Lep. Brit. p. 179 (1809).
Acronycta sundevalli, Lampa, Ent. Tidskr. 1885, p. 50.
Acronycta olivacea, Tutt, Entom. 1888, p. 81; Ter. Haar. Tijds. xlii. p. 97, pl. 5 A. f. 1.
Acronycta nigra, Tutt, Ent. Rec. i. p. 34 (1890).

Head white mixed with some black-brown; palpi black-brown except at tips; frons with brown bars above and between antennæ, which are brown; thorax black-brown, the tegulæ with the basal half mostly white with black medial line and white dorsal streak, the patagia and vertex of thorax with white patches; pectus and legs brown mixed with brownish white, the tarsi brown ringed with white; abdomen grey dorsally suffused with brown, the crests dark. Fore wing dark reddish brown with whitish patches from end of cell to postmedial line and on termen at apex and just below middle; subbasal line represented by double black striæ from costa

Fig. 16.—*Craniophora ligustri*, ♂. ½.

with bar beyond it in cell and single striga from cell with short streak beyond its lower extremity; antemedial line double, waved, oblique, strongly incurved at vein 1 and excurved above inner margin; orbicular with white annulus defined by black, round; reniform large, defined by black with slight white line on inner edge and strong lunule on outer; medial line a black bar from costa to orbicular and sinuous line from cell to inner margin; postmedial line double filled in with white from below costa to vein 3, bent outwards below costa, then dentate, incurved at discal fold and bent inwards at vein 3 to below end of cell, some white points beyond it on costa; subterminal line represented by white lunules from costa to vein 7 and a white mark angled inwards at vein 2 with dentate black mark above it; a terminal series of small black spots with white lunules on their inner side; cilia chequered white and brown. Hind wing white tinged with reddish brown especially on the veins and inner area, in female more uniformly suffused with brown; cilia chequered white and reddish brown; the underside white faintly tinged with brown, the costal area

irrorated with brown, a slight discoidal spot and traces of postmedial line excurved from costa to vein 4.

Ab. 1. *nigra*. Blacker.

Ab. 2. *sundevalli*. Fore wing more olive-brown without white on postmedial and terminal areas.

Hab. Britain, Scotland, Leech Coll., England, Leech Coll.; France, Sand Coll.; Germany, Zeller, Frey, & Leech Colls.; Austria, Leech Coll.; Hungary; Switzerland, Frey Coll.; Italy; Greece; Scandinavia; Russia, Esthonia, Frey Coll., Livonia, Zeller Coll., Sarepta; Armenia; E. Siberia, Ussuri; Japan, Oiwake. *Exp.* 34–44 millim.

Larva. Meyr. Brit. Lep. p. 142; Barrett, Lep. Brit. iii. p. 272, pl. 123. f. 2.

Pale bluish green, ventrally yellowish green; dorsal line whitish; lateral line pale yellow; spiracles red; warts black, bearing single rather long black hairs; head green. Food-plants: Ash and rarely Privet, Alder, &c. 7–9.

3634. **Craniophora obscura.** (Plate CXXIV. fig. 7.)

Craniophora obscura, Leech, Trans. Ent. Soc. 1900, p. 107.

Head and thorax black mixed with some grey and white; frons with white bars at middle and between antennæ; tegulæ with the basal half white irrorated with black; patagia with whitish patches; tarsi black ringed with white; abdomen grey-white irrorated with black and dorsally tinged with brown at base, the crests white tipped with black. Fore wing grey-white mostly suffused with black-brown and thickly irrorated with black; subbasal line double filled in with greyish, waved, from costa to vein 1; antemedial line double filled in with greyish, oblique, waved, a slight whitish mark beyond the position of claviform; orbicular and reniform irregularly defined by black, the former with diffused white annulus except above, rounded, the latter with two grey striæ on inner edge and two whitish points on outer side near upper extremity; two medial black striæ from costa and a faint oblique waved line from lower angle of cell to inner margin; postmedial line double filled in with grey lunules, bent outwards below costa, then minutely waved, incurved below vein 4, some whitish points beyond it on costa; subterminal line represented by a series of indistinct whitish lunules; a terminal series of small triangular black spots, defined on inner side by whitish lunules; cilia white and black mixed and with series of blackish spots. Hind wing white tinged with brown, the veins and terminal area from apex to vein 2 suffused with brown, in female wholly suffused with brown; a sinuous postmedial line; the termen whitish with series of slight dark lunules with blackish spots beyond them on the cilia; the underside white irrorated with fuscous, a black discoidal spot, postmedial line waved from costa to vein 4, then oblique, and a terminal series of black striæ.

Hab. W. China, Ni-tou, 1 ♂, 1 ♀ type, Kwei-chow, 1 ♀, Pu-tsu-fang, 1 ♀. *Exp.* 42–48 millim.

Genus **ACRONYCTA.**

	Type.
Acronicta, Ochs. Schmett. Eur. iv. p. 62 (1815), non descr....	*leporina.*
Acronycta, Treit. Schmett. Eur. v. (1) p. 3 (1825)	*leporina.*
Hyboma, Hübn. Verz. p. 200 (1827)	*strigosa.*
Triæna, Hübn. Verz. p. 200 (1827)	*psi.*
Jocheæra, Hübn. Verz. p. 201 (1827).....	*alni.*
Pharetra, Hübn. Verz. p. 202 (1827).....	*auricoma.*
Arctomyscis, Hübn. Verz. p. 202 (1827)	*aceris.*
Microcœlia, Guen. Noct. i. p. 33 (1852).....	*fragilis.*
Megacronycta, Grote, Bull. Buff. Soc. Nat. Sci. i. p. 79 (1873).....	*hastulifera.*
Lepitoreuma, Grote, Bull. Buff. Soc. Nat. Sci. i. p. 80 (1873).....	*ovata.*
Plataplecta, Butl. A. M. N. H. (5) i. p. 195 (1878).....	*pruinosa.*
Mastiphanes, Grote, New Check List, p. 23 (1882), non descr.	*edolata.*
Viminia, Chapman, Ent. Rec. i. p. 26 (1890)	*rumicis.*
Cuspidia, Chapman, Ent. Rec. i. p. 27 (1890)	*psi.*
Pseudopunda, Butl. Trans. Ent Soc. 1890, p. 672	*bicolor.*
Tricholonche, Grote, Mitth. Hildersheim Mus. iii. p. 16 (1896).....	*afflicta.*
Philorgyia, Grote, Mitth. Hildersheim Mus. iii. p. 17 (1896).....	*luteicoma.*
Apatela, Hübn. Tent. ined.	*aceris.*

Proboscis fully developed; palpi obliquely upturned, the 2nd joint typically reaching about to middle of frons and fringed with long hair in front, the 3rd short, the palpi sometimes short; frons smooth; eyes large, round; antennæ laminate; thorax typically clothed with hair only, usually with hair and hair-like scales mixed with a few scales or chiefly with scales, without crests; tibiæ moderately fringed with hair; abdomen with some rough hair and with basal crest typically formed of hair but usually of scales. Fore wing usually broad, sometimes narrower and more produced at apex which is rounded; the termen evenly curved and slightly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base only.

Sect. I. (*Hyboma*). Thorax clothed chiefly with scales.

A. Fore wing with distinct black streak from postmedial line to termen in submedian fold.
  a. Fore wing with black streak on medial area above vein 1.
    a^1. Fore wing with black streak in discal fold beyond postmedial line ..... *theodora.*
    b^1. Fore wing without black streak in discal fold beyond postmedial line.
      a^2. Hind wing pure white.
        a^3. Fore wing with the antemedial line angled inwards in submedian fold ..... *mansueta.*
        b^3. Fore wing with the antemedial line not angled inwards in submedian fold ..... *hemileuca.*
      b^2. Hind wing suffused with brown and with brown postmedial line ..... *strigosa.*
  b. Fore wing without black streak on medial area above vein 1.
    a^1. Fore wing with the basal black streak giving off a spur below at middle.

a^2. Fore wing with the postmedial line excurved to vein 4, then incurved.
a^3. Fore wing white, the antemedial and medial lines and the shade before subterminal line olive. *vinnula.*
b^3. Fore wing grey-white without olive-brown markings ..... *paupercula.*
c^3. Fore wing blue-grey with olive markings ..... *lepetita.*
b^2. Fore wing with the postmedial line slightly angled outwards at veins 4, 3, then incurved.
a^3. Fore wing with the reniform not suffused with rufous ..... *parallela.*
b^3. Fore wing with the reniform suffused with rufous ..... *albarufa.*
b^1. Fore wing with the basal black streak not giving off a spur below at middle.
a^2. Fore wing with brown shade in submedian interspace from base to termen ..... *connecta.*
b^2. Fore wing without brown shade in submedian interspace.
a^3. Fore wing without prominent white annulus to orbicular.
a^4. Fore wing without dark suffusion in submedian interspace beyond postmedial line.
a^5. Fore wing with the antemedial line not suffused with fuscous at middle.
a^6. Fore wing grey-white with a faint olive tinge and slight dark irroration ..... *exilis.*
b^6. Fore wing grey-white tinged with brown and with more prominent dark irroration ..... *modica.*
b^5. Fore wing with the antemedial line suffused with fuscous at middle.
a^6. Fore wing with the reniform tinged with rufous ..... *ovata.*
b^6. Fore wing with the reniform not tinged with rufous..... *hæsitata.*
b^4. Fore wing with dark suffusion in submedian interspace beyond postmedial line ..... *hasta.*
b^3. Fore wing with prominent white annulus to orbicular.
a^4. Fore wing without black suffusion on medial area; hind wing white.
a^5. Fore wing not tinged with rufous ..... *marmorata.*
b^5. Fore wing tinged with rufous ..... *albiorbis.*
b^4. Fore wing with black suffusion on medial area; hind wing brown ..... *jancousci.*
c^1. Fore wing without basal black streak ..... *crenulata.*
B. Fore wing without distinct black streak from postmedial line to termen in submedian fold.
a. Fore wing with distinct black streak from base below the cell.
a^1. Fore wing white, the markings black and strongly contrasting ..... *fragilis.*
b^1. Fore wing greyish, the markings not strongly contrasting.
a^2. Fore wing with the basal streak extending to well beyond antemedial line.
a^3. Fore wing with dark streak in discal fold from before postmedial line to termen ..... *liturata.*
b^3. Fore wing with dark suffusion in discal fold beyond postmedial line ..... *brumosa.*

b^2. Fore wing with the basal streak not extending to beyond antemedial line.
a^3. Fore wing with dark shades beyond postmedial line in discal and submedian folds.
a^4. Fore wing with the basal area not suffused with black ..... *velia.*
b^4. Fore wing with the basal area suffused with black ..... *inclara.*
b^3. Fore wing without dark shades beyond postmedial line in discal and submedian folds.
a^4. Fore wing with the antemedial line minutely dentate ..... *clarescens.*
b^4. Fore wing with the antemedial line strongly dentate ..... *minella.*
b. Fore wing without distinct black streak from base below the cell.
a^1. Fore wing with black-brown shade in submedian interspace from base to termen ..... *superans.*
b^1. Fore wing without black-brown shade in submedian interspace.
a^2. Fore wing with black streak above vein 1 before postmedial line ..... *subochrea.*
b^2. Fore wing without black streak above vein 1 before postmedial line.
a^3. Fore wing white with strongly contrasting black markings ..... *noctivaga.*
b^3. Fore wing greyish with the markings not strongly contrasting.
a^4. Fore wing with black streak below the cell from subbasal line to beyond antemedial line.
a^5. Hind wing white, the veins of terminal area streaked with brown ..... *carbonaria.*
b^5. Hind wing wholly tinged with brown, the terminal area suffused with brown ..... *subornata.*
b^4. Fore wing without black streak below the cell from subbasal line to beyond antemedial line.
a^5. Hind wing white, the veins of terminal area with dark streaks, in female the terminal area suffused with brown ..... *afflicta.*
b^5. Hind wing wholly tinged with brown, the terminal area suffused with brown.
a^6. Hind wing not tinged with orange.
a^7. Fore wing without prominent white spot on postmedial line in submedian fold.
a^8. Fore wing without prominent series of white lunules on postmedial line.
a^9. Fore wing wholly suffused with fuscous brown ..... *hamamelis.*
b^9. Fore wing with the basal area blackish, the rest of wing greyish. *increta.*
c. Fore wing more uniform greyish.
a^{10}. Hind wing suffused with brown.
a^{11}. Fore wing without purplish tinge.
a^{12}. Fore wing with the medial area whitish ..... *retardata.*

b^{12}. Fore wing with the medial area slightly paler ..... *cæsarea.*
b^{11}. Fore wing tinged with purplish ..... *impleta.*
b^{10}. Hind wing white tinged with grey ..... *illita.*
b^{8}. Fore wing with prominent series of whitish lunules on postmedial line.
a^{9}. Fore wing whitish grey, the white orbicular not strongly contrasting.
a^{10}. Fore wing with the orbicular round ..... *pruinosa.*
b^{10}. Fore wing with the orbicular more elongate elliptical ..... *consanguis.*
b^{9}. Fore wing browner grey, the white orbicular strongly contrasting ..... *albistigma.*
b^{7}. Fore wing with prominent white spot on postmedial line in submedian fold ..... *rumicis.*
b^{6}. Hind wing more or less strongly tinged with orange.
a^{7}. Hind wing without dark discoidal lunule ..... *lutea.*
b^{7}. Hind wing with dark discoidal lunule *catocaloida.*

3635. **Acronycta theodora.** (Plate CXXIV. fig. 9.)

Acronycta theodora, Schaus, Trans. Am. Ent. Soc. xxi. p. 223 (1894); Druce, Biol. Centr.-Amer., Het. ii. p. 472, pl. 93. f. 3.

Head and thorax grey-white slightly tinged with brown and irrorated with black scales; 2nd joint of palpi with black band; frons with black bar; tegulæ with slight black line near base and black tips; shoulders and outer edge of patagia streaked with black; tibiæ streaked with black, the tarsi banded with black; abdomen whitish suffused with red-brown. Fore wing grey-white irrorated with black; subbasal line represented by double black striæ from costa and cell, with black fascia from it to antemedial line in submedian fold; antemedial line double, oblique, waved, angled outwards below costa and inwards in submedian fold and on vein 1, a black fascia above vein 1 from just beyond it to postmedial line; orbicular and reniform defined by black; the former round, the latter with its centre defined by fuscous; an oblique fuscous bar from costa to reniform and indistinct dentate line from cell to inner margin closely approximated to the postmedial line, which is double, bent outwards below costa, then dentate, strongly incurved below vein 3 and angled outwards on vein 1, with a black fascia in submedian fold from it to termen, towards which it forks, a streak in discal fold from it to subterminal line and some white points beyond it on costa; a subterminal series of whitish lunules from below costa to vein 4 defined on inner side by fuscous suffusion; a terminal series of small wedge-shaped black spots

with black streaks beyond them intersecting the cilia. Hind wing white, the costa and inner margin slightly tinged with brown, the veins brown; a terminal series of small black lunules with black spots beyond them on the cilia; the underside with the costal area slightly irrorated with brown, a blackish bar from middle of costa, a small discoidal spot and postmedial line with minute black streaks on the veins, bent inwards at vein 4, then oblique to near tornus.

Hab. Mexico, Jalapa (*Trujillo*), 1 ♀; Guatemala (*Rodriguez*), 1 ♂, Godman-Salvin Coll. *Exp.* 44 millim.

3636. **Acronycta mansueta.** (Plate CXXIV. fig. 10.)

Acronycta mansueta, Smith, Ent. News Philad. viii. p. 151 (1897); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 100, pl. xii. f. 7; Dyar, Cat. Lep. N. Am. p. 102.

♀. Head and thorax violaceous grey mixed with dark brown; palpi white at base and with black band on 2nd joint; frons with dark brown bar above and white bars between antennæ; shoulders and outer edge of patagia with black-brown streak; tibiæ with black streaks, the tarsi banded black and white; abdomen greyish suffused with brown, the basal crest large and dark. Fore wing violaceous grey irrorated and in parts suffused with brown especially on inner and postmedial areas; subbasal line represented by an oblique black striga from costa; a slight black streak in submedian fold from base to antemedial line giving off a streak above vein 1 extending to medial line, another streak below vein 1 from near base to medial line; antemedial line double, oblique, waved, angled outwards below costa and inwards in submedian fold; orbicular and reniform whitish slightly defined by brown, the former round, the latter rather narrow and with brownish centre, some brown suffusion from costa extending between their upper parts; postmedial line double filled in with white, the inner line indistinct, bent outwards below costa, then minutely waved, slightly angled outwards at veins 4, 3, 1, incurved below vein 3, a diffused oblique black streak from it at submedian fold to termen at vein 3, some whitish points beyond it on costa; a diffused white subterminal line excurved below vein 7 and at middle and angled inwards at discal and submedian folds, defined by brownish on outer side and with slight dark streaks in the interspaces from it to the terminal points; cilia white with slight dark line near base and intersected by slight streaks. Hind wing pure white with slight dark terminal line; the underside with the costal area slightly irrorated with brown, a slight discoidal point.

Hab. U.S.A., Washington, Colorado, Glenwood Springs, 1 ♀, Garfield Co., California, Los Angeles, Nevada Co., Sierra Nevada. *Exp.* 34 millim.

*3637. Acronycta hemileuca. (Plate CXXIV. fig. 11.)

Acronycta hemileuca, Püng. Iris, xii. p. 291, pl. 8. f. 6 (1899); Staud. Cat. Lep. pal. p. 132.

♂ Head and thorax grey tinged with brown and mixed with black; palpi with the 2nd joint black towards tip; tarsi brown ringed with white; abdomen white dorsally mixed with fuscous, the basal crest tinged with brown. Fore wing violaceous grey tinged with brown and irrorated and suffused with black; a black streak below the cell extending to beyond antemedial line; subbasal line represented by two black striæ from costa; antemedial line double, rather diffused, oblique to submedian fold, then waved; the medial area with black streak above vein 1; orbicular with slight brownish centre and pale annulus incompletely defined by black, its lower extremity produced; reniform with its centre defined by fuscous and whitish annulus defined by black: a diffused oblique blackish bar from middle of costa; postmedial line double, bent outwards below costa, then dentate, oblique to vein 4, then strongly incurved, crossed by a black streak in submedian fold from just before it to termen, some pale points beyond it on costa; a faint diffused lunulate subterminal shade from costa to vein 1; a wedge-shaped white mark below the extremity of the black streak in submedian fold; a terminal series of small black lunules; cilia grey intersected with fuscous. Hind wing pure white with slight brown irroration at apex and terminal series of brown striæ; the underside with the costa very slightly tinged with brown, traces of a discoidal lunule and curved postmedial line from costa to vein 4.

Hab. Tibet, Kuku-nor in Coll. Püngeler. *Exp.* 32 millim.

3638. Acronycta strigosa.

Noctua strigosa, Schiff. Wien. Verz. p. 88 (1776); Fabr. Mant. Ins. ii. p. 142 (1787); Frr. Beitr. pl. 11; Steph. Ill. Brit. Ent., Haust. iii. p. 39; Wood, Ind. Ent. pl. 52. f. 1665; Staud. Cat. Lep. pal. p. 132.

Noctua favillacea, Esp. Schmett. iv. pl. 127. f. 4 (1788); Capieur, Naturf. 1789, p. 98, pl. 3. ff. 5–8; Hübn. Eur. Schmett., Noct. f. 2; Dup. Lép. Fr. vi. p. 230, pl. 87. f. 4.

Acronycta bryophiloides, Horm, Ent. Nachr. xvii. p. 145 (1891).

Acronycta casparii, Steinert, Iris, x. p. 398 (1897), & xii. pl. 2. f. 6; Caspari, Jahrb. Nass. lii. p. 177, pl. 4. ff. 2, 3.

Head and thorax pale brown slightly mixed with fuscous; 2nd joint of palpi with black band; frons with black bars above and between antennæ; shoulders and outer edges of patagia with black stripes; tibiæ slightly streaked with black, the tarsi banded with black above; abdomen brownish ochreous slightly irrorated with fuscous. Fore wing greyish ochreous tinged with brown and irrorated with fuscous; subbasal line represented by a black striga from costa; a sinuous black streak in submedian fold from base to

antemedial line giving off a streak above vein 1; the base of inner margin yellow with some diffused black above it; antemedial line double, irregularly waved, oblique; the medial area with black streak above vein 1 defined by brown above; orbicular defined by black, produced to a point at lower extremity, the reniform ochreous white defined by black on inner side, some brown suffusion between them; a dark striga from middle of costa; postmedial line double filled in with whitish, strongly bent outwards below costa, then dentate, strongly incurved below vein 4 and angled outwards on vein 1, a black streak from just before it to near termen, strong beyond the line, and some pale points with slight dark streaks between them beyond it on costa; a terminal series of small black spots with slight dark streaks from them intersecting the cilia, which have a slight dark line through them. Hind wing ochreous

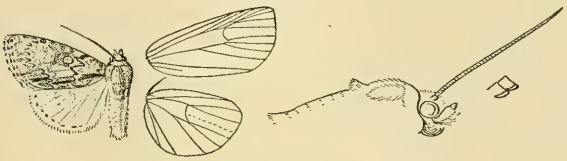


Fig. 17.—*Acronycta strigosa*, ♂. ½.

white tinged and irrorated with brown, especially on inner and terminal areas, in female more uniformly brown; a faint postmedial line excurved to vein 4, then incurved; the underside white slightly irrorated with brown, a black discoidal spot, postmedial line oblique to vein 4, then incurved, and terminal series of small black lunules.

Ab. 1. *bryophiloides*. Fore wing with the ground-colour more uniform dark grey.

Hab. Britain, Leech Coll.; France, Sand Coll.; Germany, Zeller and Leech Colls.; Austria, Bucovina; Hungary, Leech Coll.; Switzerland; Rumelia; Russia, Frey Coll., Livonia, Zeller Coll., St. Petersburg, Sarepta; Armenia; W. Siberia; E. Siberia, Amurland, Ussuri; Japan, Yesso (*Pryer*), 1 ♀, Hakodaté (*Leech*), 1 ♀, Oiwake (*Pryer*), 2 ♀; Corea, Gensan (*Leech*), 1 ♀; W. China, Ta-chien-lu (*Pratt*), 1 ♂. *Exp.* 30–38 millim.

Larva. Meyr. Brit. Lep. p. 141; Barrett, Lep. Brit. iii. p. 243, pl. 121. f. 2.

Green, rarely purple-brown; an irregular dorsal crimson-brown stripe, scattered blackish, ochreous and whitish hairs; 11th somite with dorsal prominence; head dark brown. Food-plant: Hawthorn. 7–9.

3639. **Acronycta vinnula.** (Plate CXXIV. fig. 12.)

Microcœlia vinnula, Grote, Proc. Ent. Soc. Phil. ii. p. 436, pl. ix. f. 2 (1864); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 93, pl. iv. f. 11; Smith, Cat. Noct. N. Am. p. 38.

♀. Head and thorax white; 2nd joint of palpi with black

band; frons with lateral black points; antennæ fuscous, white at base, the basal joint black behind; tegulæ fuscous at tips; prothorax with pair of black spots; shoulders and outer edge of patagia with black stripe; metathorax edged with black behind; tibiæ slightly streaked with black, the tarsi banded black and white; abdomen white irrorated with blackish and dorsally tinged with brown except at extremity. Fore wing white slightly irrorated with olive-grey and with some olive-grey suffusion above base of inner margin, between orbicular and reniform and on postmedial area; subbasal line represented by double black striæ from costa; a sinuous black streak in submedian fold from base to antemedial line, giving off slight spurs below at middle and above at antemedial line, which is double, oblique, waved; orbicular defined by black, small, round, incomplete above; reniform defined by black, indistinctly on outer side, and with some olive in centre; medial line olive, blackish at costa, oblique to median nervure, slightly angled outwards at vein 1; postmedial line black, double at costa, slightly bent outwards below costa, then minutely waved, excurved to vein 4, then incurved, a black streak from it to termen in submedian fold, some white points with short black streaks between them beyond it on costa; subterminal line defined by the contrast between the postmedial and terminal areas, dentate, angled outwards at veins 7, 6, and inwards in discal fold, a short black streak beyond it in discal fold; a terminal series of small triangular black spots with blackish streaks from them intersecting the cilia. Hind wing whitish suffused with brown; a terminal series of dark striæ; cilia white with a brownish line through them towards apex; the underside white faintly tinged with brown in parts and the costal area slightly irrorated with brown, a blackish discoidal spot and diffused postmedial line irregularly waved from costa to vein 5, then oblique, some slight black lunules on termen.

Hab. Canada; U.S.A., New York (*Grote*), 1 ♀, Albany, Evans Center, Long I., New Jersey, 1 ♀, Mississippi, Missouri, Texas. *Exp.* 32–36 millim.

Larva. Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 94.

Head green with a brown spot at the vertex of each lobe. Body robust, green with a pale lateral line; tubercle i. of joint 5 elevated, brown. Food-plant: Elm.—H. G. D.

3640. Acronycta paupercula. (Plate CXXIV. fig. 13.)

Acronycta paupercula, Grote, Proc. Ac. Nat. Sci. Phil. 1874, p. 197; Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 97, pl. xii. f. 2; Smith, Cat. Noct. N. Am. p. 38.

♀. Head and thorax white mixed with pale brownish; palpi with black band on 2nd joint; antennæ brown, the basal joint black behind; shoulders and outer edges of patagia with black streaks; tibiæ streaked with black, the tarsi blackish ringed with white; abdomen whitish dorsally suffused with brown. Fore wing

white slightly irrorated with dark brown and tinged with brown in parts; subbasal line represented by double dark striæ from costa; a sinuous black streak in submedian fold giving off spurs below at middle and above at antemedial line, which is double, oblique, waved, angled inwards in submedian fold; orbicular and reniform defined by black, the former small, rather elliptical, the latter produced at upper and lower extremities; a slightly waved medial line, indistinct except from costa to reniform; postmedial line double filled in with white, the inner line indistinct, bent outwards below costa, excurved to vein 4, then incurved, some white points with minute dark streaks between them beyond it on costa, and crossed by a black streak in submedian fold from well before it to termen; a faint white subterminal line slightly excurved at vein 7 and middle, crossed by a minute dark streak in discal fold; a terminal series of small black spots with streaks from them intersecting the cilia. Hind wing white tinged with brown especially on the veins and terminal area; a terminal series of faint brown spots with slight marks beyond them on the cilia; the underside white slightly irrorated with brown, a discoidal spot and indistinct postmedial line with dark spots at costa and submedian fold.

Hab. U.S.A., Texas, 2 ♀ type. *Exp.* 36–38 millim.

*3641. **Acronycta lepetita.** (Plate CXXIV. fig. 14.)

Acronycta lepetita, Smith, Ann. N.Y. Ac. Sci. xviii. p. 94 (1908).

Head, thorax, and abdomen bluish grey mixed with olive-brown; palpi black at sides; a black point at base of antennæ. Fore wing blue-grey mixed with olive-brown, the postmedial area more suffused with olive especially towards costa and above submedian streak; a black streak below base of cell extending to antemedial line towards which it forks, with a slight spur below at middle; subbasal line represented by an olive spot on costa; antemedial line double, olive-grey, very oblique to submeian fold near middle; orbicular slightly defined by black, oblique elliptical, sometimes confluent with the reniform, which is slightly tinged with fuscous and incompletely defined by black, rather irregularly lunulate; medial shade oblique to the reniform, then obsolete; postmedial line double filled in with whitish, the outer line black, bent outwards below costa and slightly incurved below vein 4, crossed by a slight black streak in submedian fold extending to termen; subterminal line only defined by the darker postmedial area; a terminal series of black points. Hind wing fuscous, paler at base; cilia whitish; the underside with discoidal spot and more or less distinct postmedial line.

Hab. U.S.A., Texas, Brownsville. *Exp.* 26–28 millim. This species is unknown to me; figured from a drawing from type in Coll. J. B. Smith.

3642. Acronycta parallela. (Plate CXXIV. fig. 15.)

Apatela parallela, Grote, Can. Ent. xi. p. 58 (1879); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 110, pl. iii. f. 9; Smith, Cat. Noct. N. Am. p. 38.

♂. Head and thorax violaceous grey mixed with dark brown, the vertex of head and medial part of tegulæ suffused with black; palpi white at base, the 2nd joint with black band; shoulders and outer edges of patagia with black-brown stripes; tibiæ with slight black streaks, the tarsi banded dark brown and white; abdomen white dorsally irrorated with reddish brown. Fore wing violaceous grey suffused with brown and slightly irrorated with fuscous; subbasal line represented by double dark striæ from costa and single striga from cell; a black streak in submedian fold from base to antemedial line giving off a spur below at middle; antemedial line double, the inner line strong from costa to submedian fold, oblique, sinuous, angled outwards below costa and inwards in submedian fold; orbicular and reniform defined by black, the former round with slight dark centre, the latter large; a black striga from middle of costa to orbicular; postmedial line double filled in with whitish, the inner line indistinct, strongly bent outwards below costa, then minutely waved, slightly incurved at discal fold, incurved below vein 4, a rather diffused dark streak in submedian fold from it to near termen and some white points beyond it on costa; subterminal line whitish excurved below vein 7 and at middle, then incurved; a terminal series of black points and fine terminal line; cilia intersected by slight streaks and with fine dark line near base. Hind wing semihyaline white; the underside with the costal area slightly irrorated with pale brown and some slight dark striæ on termen.

Hab. U.S.A., Texas, Colorado, 2 ♂ type, Garfield Co., Denver. *Exp.* 34 millim.

3643. Acronycta albarufa. (Plate CXXIV. fig. 16.)

Acronycta albarufa, Grote, Proc. Bost. Soc. N. H. xvi. p. 239 (1874); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 134, pl. iii. f. 10, & pl. xii. f. 9; Smith, Cat. Noct. N. Am. p. 38.
Acronycta walkeri, Andrews, Can. Ent. ix. p. 98 (1877).

♂. Head and thorax violaceous grey suffused with brown; 2nd joint of palpi with black band; frons with black bar; tegulæ with strong black line near base; shoulders and outer edge of patagia with black streak; tibiæ slightly streaked with black, the tarsi banded with black; abdomen whitish irrorated with fuscous and dorsally tinged with brown. Fore wing violaceous grey tinged with brown and slightly irrorated with fuscous; subbasal line represented by double black striæ from costa; a curved black streak in submedian fold slightly defined by whitish above from base to the antemedial line, which is double, black, angled outwards below costa and inwards in submedian fold, then almost obsolete;

orbicular and reniform whitish defined by black, the former round, the latter with rufous centre, the cell between them suffused with black; a medial black bar from costa and traces of a line from cell to inner margin; postmedial line black slightly defined by whitish on inner side, strongly bent outwards below costa, then dentate, strongly incurved below vein 3 and angled outwards on vein 1, a black streak from it to termen in submedian fold and some whitish points on costa; an indistinct whitish subterminal line excurved below vein 7 and at middle, and angled inwards in discal and submedian folds, with slight black streaks in the interspaces from it to the terminal series of minute lunules which have black streaks from them intersecting the cilia through which there is a dark line. Hind wing pure white, the termen slightly tinged with brown at apex; a terminal series of slight brown lunules; cilia with a diffused brown line through them; the underside with the costal area slightly irrorated with brown, a small discoidal spot and traces of a curved postmedial line waved on costal area.

♀. Hind wing wholly suffused with brown, a slight discoidal spot and diffused sinuous postmedial line.

Hab. Canada, Manitoba, Aweme (*Criddle*), 1 ♀; U.S.A., Massachusetts, New York, Center (*Lintner*), 1 ♂, 4 ♀, Georgia, Minnesota, St. Paul, Missouri, 1 ♀ type, Colorado, Denver, New Mexico. *Exp.* 36–40 millim.

3644. Acronycta connecta. (Plate CXXIV. fig. 17.)

Acronycta connecta, Grote, Bull. Buff. Soc. Nat. Sci. i. p. 79 (1873); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 115, pl. ii. f. 16; Smith, Cat. Noct. N. Am. p. 43.

Head and thorax white slightly tinged with brown; 2nd joint of palpi with black band; frons with blackish bars above and between antennæ; shoulders and outer edges of patagia with black streaks; tarsi black ringed with grey; abdomen grey-white dorsally tinged with brown. Fore wing grey-white slightly tinged with brown and irrorated with fuscous, the area between the cell and veins 3 and 1 suffused with fuscous, the costal area tinged with fuscous on terminal half, the veins with slight dark streaks; subbasal line represented by an oblique black striga from costa; a black streak in submedian fold from base to just beyond the antemedial line which is double, the lines widely separated towards costa, oblique, waved, angled inwards in submedian fold and on vein 1; orbicular defined by black except above, somewhat produced to a point at lower extremity, and with black suffusion between it and reniform, which is defined by black on inner side, ill-defined on outer and with some brown in centre; an oblique black striga from middle of costa; postmedial line black defined by whitish on inner side, double at costa, strongly bent outwards below costa, then minutely dentate, strongly incurved below vein 3 and excurved below submedian fold, a black streak in submedian fold from well before it to termen and a slight streak in discal fold from it to

termen, some whitish points beyond it on costa; an indistinct whitish subterminal line excurved below vein 7 and at middle and angled inwards in submedian fold; a terminal series of small triangular black spots with brownish marks beyond them on the cilia. Hind wing white faintly tinged with yellowish at base and fuscous on terminal area, the veins brownish; a series of slight brown striæ on termen; the underside slightly irrorated with brown, a faint discoidal spot and postmedial line excurved to vein 4, then incurved and with dark spot in submedian fold.

Hab. CANADA: U.S.A., New York, Staten I., Evans Center (*Grote*), 1 ♂, 1 ♀ type, Distr. of Columbia, Washington, Illinois. *Exp.* 38 millim.

Larva. Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 116.

Head greyish, with a brown band on the vertex of each lobe. Body whitish green with an orange subdorsal line, running along tubercle ii.; tubercles i. and ii. black, distinct; a double black bent line on joint 2; hairs single dorsally, multiple laterally. Food-plant: Willow.—H. G. D.

3645. **Acronycta exilis.** (Plate CXXIV. fig. 18.)

Acronycta exilis, Grote, Proc. Ac. Nat. Sci. Phil. 1874, p. 197; Smith, Cat. Noct. N. Am. p. 44.
Acronycta modica, Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 138 (part.).

♀. Head and thorax grey-white, the vertex of head tinged with rufous; palpi white, the 2nd and 3rd joints with black bands; frons with black bar; shoulders with black streaks; tegulæ with some blackish at middle; tibiæ slightly streaked with black, the tarsi banded with black; abdomen grey-white. Fore wing grey-white with a faint olive tinge and slight black irroration; subbasal line represented by double black striæ from costa; a slight black streak in submedian fold from base to the antemedial line, which is double, oblique, waved; orbicular and reniform whitish, defined by blackish, open above and below and with rufous centres, the former large, somewhat oblique elliptical; a black bar from costa to orbicular and slight oblique line from lower angle of cell to inner margin; postmedial line double, oblique from costa to vein 6, slightly angled inwards in discal fold and incurved below vein 3; a slight black streak in submedian fold from it to termen and some black points on costa; an indistinct whitish subterminal line excurved below vein 7 and at middle; a terminal series of black points defined by slight whitish lunules; cilia with a dark line through them. Hind wing greyish uniformly suffused with brown; cilia whitish with a slight brown line through them; the underside white irrorated with brown, a blackish discoidal spot, waved postmedial line incurved below vein 4, and terminal series of slight lunules.

Hab. U.S.A., New York, Albany (*Bailey*), 2 ♀ type. *Exp.* 34 millim.

3646. Acronycta modica. (Plate CXXIV. fig. 19.)

Acronycta modica, Wlk. ix. 56 (1856); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 138, pl. ii. f. 4, & pl. iv. f. 9; Smith, Cat. Noct. N. Am. p. 44.

Head, thorax, and abdomen grey-white slightly tinged with brown and irrorated with fuscous; 2nd joint of palpi with black band; frons with black bar; tegulæ with slight black medial line; shoulders with black streaks; tibiæ with slight black streaks, the tarsi banded with black. Fore wing grey-white tinged with brown and slightly irrorated with fuscous; subbasal line represented by double black striæ from costa and single striga from cell; antemedial line double, oblique, waved; orbicular and reniform whitish defined by a few black scales and with brownish centres, the former round; a blackish striga from middle of costa and a faint line from lower angle of cell to inner margin; postmedial line double filled in by whitish, bent outwards below costa, then minutely waved and produced to short black streaks on the veins, incurved below vein 3, crossed by a black streak in submedian fold from well before it to near termen, some white points with minute black streaks between them beyond it on costa; subterminal line white, slightly angled outwards at vein 7 and excurved at middle and with a minute black streak on it at discal fold; a terminal series of black striæ defined by whitish lunules; cilia with slight dark line through them and series of black points at tips. Hind wing greyish tinged with yellowish on basal and inner areas, the terminal area suffused with fuscous and the veins of terminal half with dark streaks; a slight discoidal spot; cilia ochreous white with a slight dark line through them; the underside white irrorated with fuscous, a blackish discoidal spot, rather diffused waved postmedial line, and terminal series of small lunules.

Hab. U.S.A., Massachusetts, New York (*Doubleday*, *Grote*), 2 ♂, 2 ♀ type, Pennsylvania, New Brighton (*Merrick*), 1 ♂, Distr. of Columbia, Washington, Minnesota, Texas, 1 ♂, 1 ♀. *Exp.* 38–42 millim.

Larva. Head brown-mottled, a black line around clypeus. Body brown with a dark lateral shade, heaviest above, joining across on joints 12–13; hairs nearly single, fine, obscure. Food-plant: Oak. —H. G. D.

3647. Acronycta ovata. (Plate CXXIV. fig. 20.)

Acronycta ovata, Grote, Bull. Buff. Soc. Nat. Sci. i. p. 80, pl. ii. f. 14 (1873); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 135, pl. iv. ff. 7–8, & pl. xii. f. 10; Smith, Cat. Noct. N. Am. p. 43.

Head and thorax grey-white mixed with brown; 2nd joint of palpi with black band; shoulders with black streaks; tibiæ streaked with black, the tarsi ringed with black; abdomen grey tinged with brown and irrorated with fuscous. Fore wing grey tinged with brown and irrorated with fuscous; subbasal line represented by double black striæ from costa and single striga from cell; a rather

diffused curved black streak in submedian fold from base to the antemedial line where it expands into a black patch, the line double, the two parts widely separated towards costa and with black spots at costa, angled outwards below costa and inwards below cell; orbicular and reniform defined by black, the former round, the latter with its centre defined by red-brown; a very oblique brown striga from costa to reniform and traces of a line from lower angle of cell to inner margin; postmedial line double filled in with whitish and with small black spots at costa, bent outwards below costa, then minutely waved and slightly angled at veins 4, 3, then strongly incurved and angled outwards at vein 1, a black streak in submedian fold from its inner side to termen and some whitish points with black marks between them beyond it on costa; a pale minutely dentate subterminal line slightly defined by fuscous on outer side, angled outwards at vein 7, excurved at middle and angled inwards at discal and submedian folds, a slight black mark beyond it in discal fold and slight streaks in the interspaces to the terminal series of small black lunules which have fuscous marks beyond them on the cilia. Hind wing whitish suffused with reddish brown, the terminal area rather darker; traces of a slight discoidal spot and postmedial line excurved to vein 4, then incurved; a terminal series of slight brown lunules; cilia whitish with a brownish line through them; the underside whitish tinged and irrorated with brown, a blackish discoidal spot, postmedial line waved to vein 4, then incurved, and terminal series of slight lunules.

Hab. U.S.A., Massachusetts, Newton, New York, Albany (*Bailey*), 1 ♂, 1 ♀, Pennsylvania, 1 ♂ type, New Brighton (*Merrick*), 1 ♀, Distr. of Columbia, Washington, Minnesota, St. Paul, Texas and West to foot of Rocky Mts. *Exp.* 36–38 millim.

This is probably a variety of *A. modica* with the basal streak and antemedial line of fore wing more prominent.

Larva. Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 137, pl. v. f. 3.

Head brown. Body brown, a narrow dorsal darker line; a double row of white dorsal blotches on tubercle i. Food-plant: Oak.—H. G. D.

3648. **Acronycta hæsitata.** (Plate CXXIV. fig. 21.)

Lepitoreuma hæsitata, Grote, Bull. U.S. Geol. Geog. Surv. Terr. vi. p. 575 (1882); Smith, Cat. Noct. N. Am. p. 44.

Acronycta clarescens, Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 140, pl. iii. f. 3, & pl. xii. f. 11 (nec Guen.).

♀. Head and thorax bluish white mixed with dark brown; palpi white at base and with black band on 2nd joint; tegulæ with strong medial black line; shoulders with black streaks; tibiæ streaked with black, the tarsi banded with black; abdomen bluish grey irrorated with black. Fore wing bluish grey tinged with brown and slightly irrorated with black, especially on the veins; subbasal line represented by double black striæ from costa

and single striga from cell with black streak beyond it in submedian fold defined by white above; antemedial line double, rather diffused and filled in by brownish in and just below cell, angled outwards below costa, then oblique and slightly waved; orbicular and reniform slightly defined by black, the former with brown centre and white annulus, round, the latter with brown-suffused centre and slight pale annulus, open above and below; a blackish mark on middle of costa and faint waved line from lower angle of cell to inner margin; postmedial line double filled in with slight whitish spots, bent outwards below costa, then minutely dentate and produced to short black streaks on the veins, excurved to vein 4, then incurved and angled outwards on vein 1, crossed by a slight black streak in submedian fold from well before it to near termen, some whitish points beyond it on costa; a minutely dentate white subterminal line with slight black mark beyond it in discal fold; a terminal series of minute triangular black spots defined by whitish lunules and rather larger spot below vein 2; cilia with blackish line near base and whitish tips. Hind wing fuscous brown; the cilia whitish with a slight brown line near base; the underside white irrorated with brown, a large blackish discoidal lunule, waved postmedial line with blackish spot in submedian fold, and terminal series of small lunules.

Hab. Canada; U.S.A., Maine, Kittery Point, New Hampshire, Massachusetts, New York, Pennsylvania, 3 ♀ type, Texas, Arizona. *Exp.* 42 millim.

Larva. Like *A. ovata*, without the white dorsal spots.—H. G. D.

3649. Acronycta hasta. (Plate CXXIV. fig. 22.)

Acronycta hasta, Guen. Noct. i. p. 45 (1852); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 87, pl. i. f. 14; Smith, Cat. Noct. N. Am. p. 36.
Acronycta telum, Guen. Noct. i. p. 45 (1852).
Acronycta smithii, Butl. A. M. N. H. (6) xi. p. 401 (1893).

Head and thorax grey-white irrorated with fuscous; 2nd joint of palpi with black band; shoulders with black stripes; tegulæ with slight dark line near base; tibiæ with slight dark streaks, the tarsi banded with black; abdomen grey-white irrorated with fuscous, dorsally suffused with pale reddish brown at base. Fore wing grey-white thickly irrorated with fuscous; subbasal line represented by double dark striæ from costa and a single striga from cell with a slight black streak from it to antemedial line with fuscous suffusion below it; antemedial line double, dark, rather diffused, oblique, slightly waved and bent inwards to inner margin; orbicular and reniform defined by black and their centres slightly by fuscous, the former round; a medial dark spot on costa; postmedial line double filled in with whitish, the outer line black, with double black points at costa, bent outwards below costa, then minutely dentate, excurved to vein 4, then incurved, some brownish suffusion beyond it, darker from vein 3 to below submedian fold

and with a slight black streak in submedian fold from it to termen; the veins of terminal area with slight dark streaks; an indistinct dentate whitish subterminal line with small dark spots on its outer edge; a terminal series of small triangular black spots with slight dark marks beyond them on the cilia. Hind wing whitish tinged with reddish brown; cilia white mixed with brown at tips; the underside white tinged with brown in parts, the costal and terminal areas with slight dark irroration, a small black discoidal spot, indistinct curved postmedial line with dark spot in submedian fold and some points on termen.

Hab. Canada; U.S.A., Maine, New Hampshire, White Mts., New York, 1 ♂, 2 ♀ type *smithii*, Ithaca, Otto, New Jersey, Delaware, Distr. of Columbia, Washington, Kansas (*Snow*), 1 ♂, 1 ♀. *Exp.* 40–42 millim.

*3650. Acronycta marmorata. (Plate CXXIV. fig. 23.)

Acronycta marmorata, Smith, Ent. News Philad. viii. p. 151 (1897); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 131, pl. xiii. f. 3; Dyar, Cat. Lep. N. Am. p. 103.

Head and thorax white irrorated with a few black scales; tegulæ with a black line near tips and tipped with black; patagia with black lines near edges; abdomen white tinged with ochreous. Fore wing white tinged with ochreous and irrorated with brown; a black streak below base of cell; subbasal line double, from costa to submedian fold; antemedial line double, black, oblique, excurved in interspaces; orbicular and reniform defined by black, the former white with dark point in centre, round, the latter with dark centre and slight whitish annulus; medial line distinct, oblique from costa to reniform, inwardly oblique and dentate below the cell; postmedial line double, the inner line brownish, the outer black, bent outwards below costa, then dentate, oblique below vein 4, crossed by a black streak in submedian fold from the medial line to termen, some pale points beyond it on termen; subterminal line white, irregularly dentate, with dark marks beyond it in the interspaces; a terminal series of small black lunules defined on inner side by a waved white line; cilia intersected with black. Hind wing whitish, the veins tinged with fuscous; a brown terminal line; the underside white irrorated with black, a dark discoidal point and interrupted postmedial line.

Hab. U.S.A., Montana, California, Folsom. *Exp.* 36–42 millim. This species is unknown to me, figured from a drawing from cotype in Coll. J. B. Smith.

3651. Acronycta albiorbis, n. sp.

Plataplecta pruinosa, Moore, Lep. Ceyl. iii. p. 5, pl. 144. f. 3 (nec Guen.).

Head and thorax white mixed with reddish brown; palpi with blackish mark on 2nd joint above; tegulæ and patagia edged with

blackish; abdomen whitish suffused with pale yellow-brown. Fore wing white almost entirely suffused with pale rufous; subbasal line represented by a black striga from costa; a rather diffused sinuous black streak in submedian fold from base to antemedial line which is double, the lines widely separated towards costa, oblique, waved, with black point on the outer line in submedian fold with white streak from it to medial line; orbicular rather quadrate, extending to antemedial line and defined by an oblique black striga on outer side; reniform large, rather quadrate, incompletely defined by black except above and with slight dark lunule on inner side of centre; a slight dark patch on middle of costa and brownish line from cell to inner margin angled outwards on vein 1; postmedial line double filled in with whitish lunules, bent outward below costa, then minutely dentate, excurved to vein 4, then incurved, crossed by a black streak in submedian fold from medial to subterminal lines and with some brown suffusion beyond it in discal and submedian folds; subterminal line formed of ill-defined white lunules; some slight black striæ on termen defined by whitish lunules. Hind wing whitish suffused with pale red-brown; an indistinct postmedial line defined by whitish on outer side; the underside white tinged with red-brown, the costal and terminal areas slightly irrorated with brown, a brownish patch on middle of costa, slight discoidal spot and diffused postmedial line oblique and waved to vein 5, then incurved.

Ab. 1. Greyer and irrorated with darker brown; fore wing with the white lunules on postmedial line smaller and less distinct.—Travancore.

Hab. Travancore, Pirmád (*Imray*), 1 ♀; Ceylon, Pundaloya (*Green*), 3 ♂ type. *Exp.* ♂ 38, ♀ 42 millim.

*3652. Acronycta jancousci.

Apatela jankowskii, Oberth. Ét. Ent. v. p. 69, pl. 7. f. 1 (1880); Staud. Cat. Lep. pal. p. 132.

♀. Head and thorax grey mixed with white and black-brown; palpi with the 2nd joint black at sides; frons with black bars at middle and above; tarsi black ringed with white; abdomen brown, the basal crest white tipped with black, the ventral surface grey irrorated with black. Fore wing violaceous grey irrorated with brown; a wedge-shaped black streak below base of cell, defined by white above and with pure white spot at its extremity; subbasal line represented by two black striæ from costa; antemedial line double, oblique, waved; medial area suffused with black except from costa to median nervure beyond the antemedial line and beyond the reniform; orbicular white defined by black and with brown point in centre, small, round; reniform whitish defined by black and with brown lunule in centre; an indistinct double minutely waved medial line; postmedial line double, black,

filled in with white from costa to vein 3, bent outwards below costa, then lunulate, excurved to vein 4, then strongly incurved, a black patch beyond it on costal area with some white points on costa, the black suffusion extending beyond it on inner area, and with black streak from it to termen in submedian fold; subterminal line white faintly defined by brown on inner side and on outer by black with black streaks on the veins, minutely waved, angled outward at vein 7 and excurved at middle; a fine black terminal line; cilia chequered brown and white. Hind wing red-brown with traces of a curved postmedial line; cilia white with a brown line through them; the underside whitish, the costal and terminal areas irrorated with brown, a brown discoidal lunule and curved crenulate postmedial line.

Hab. E. Siberia, Amurland, Ussuri in Coll. Püngeler; Japan. *Exp.* 34–40 millim.

*3653. Acronycta crenulata. (Plate CXXIV. fig. 24.)

Acronycta crenulata, Beth.-Baker, Nov. Zool. xiii. p. 198 (1906).

Head and thorax white mixed with reddish brown; palpi except at tips and sides of frons black-brown; antennæ blackish except at base; tegulæ with dark line near tips; metathorax with paired black points; tarsi blackish ringed with white; abdomen whitish suffused with brown. Fore wing white almost wholly suffused with pale red-brown; subbasal line indistinct, double, blackish filled in with white, excurved below costa and ending at vein 1; antemedial line double, blackish filled in with whitish, oblique, waved; orbicular a small round white spot slightly defined by black; reniform slightly defined by black and with white lunule on its outer edge; medial line with oblique blackish striga from costa, indistinct and waved from lower angle of cell to inner margin; postmedial line double, black, filled in with white lunules, bent outwards below costa, then dentate, incurved below vein 4, some white points beyond it on costa and a short black fascia in submedian fold from it to subterminal line, which is indistinct, whitish, excurved below vein 7 and at middle; a terminal series of small black spots defined by slight whitish lunules, cilia chequered white and blackish. Hind wing white tinged with brown, especially on terminal area; an indistinct diffused postmedial line; cilia white with some brownish spots; the underside whitish, the costal area irrorated with brown, a diffused brown bar from middle of costa, small discoidal spot, and crenulate postmedial line bent outwards below costa.

Hab. Br. N. Guinea, Mt. Kebea (*Pratt*), type † ♂ in Coll. Bethune-Baker. *Exp.* 44 millim.

3654. Acronycta fragilis. (Plate CXXIV. fig. 25.)

Microcœlia fragilis, Guen. Noct. i. p. 34 (1852); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 94, pl. xii. f. 3; Smith, Cat. Noct. N. Am. p. 48.
Bryophila spectans, Wlk. Can. Nat. & Geol. vi. p. 38 (1861).

Head and thorax white mixed with brown and black; 2nd joint of palpi with black band; antennæ with the base of shaft above white ringed with black; tegulæ with diffused dark medial band and slight dorsal black stripe; shoulders and outer edges of patagia with black stripes, the upper edge of patagia brown; metathorax edged with black behind; tibiæ streaked with black, the tarsi banded with black; abdomen white tinged with brown, the basal crest tipped with black. Fore wing white suffused in parts with brown and black, especially on inner half and beyond the postmedial line; subbasal line represented by double black striæ from costa and single striga from cell; a diffused black streak in submedian fold from base to antemedial line, which is double filled in with white, oblique, waved, angled outwards above inner margin; orbicular and reniform white defined by diffused black, the former round; a diffused dark bar from middle of costa; postmedial line double filled in with white, strongly bent outwards below costa, then dentate, strongly incurved below vein 3 and angled outward on vein 1, some white points beyond it on costa; a diffused waved white subterminal line, excurved below vein 7 and at middle, and angled inwards in submedian fold where there is a blackish spot beyond it; a terminal series of black spots defined on inner side by white lunules and with brown marks beyond them on the cilia, which are white. Hind wing white faintly tinged with reddish brown; a terminal series of dark striæ; the underside with slight discoidal lunule and traces of curved postmedial line.

Hab. Canada, Manitoba, Cartwright (*Heath*), 1 ♀; U.S.A., Vermont, Manchester, New York (*Doubleday*, *Grote*), 3 ♂, 1 ♀ type, Lancaster, New Jersey, Mississippi. *Exp.* 36 millim.

Larva. Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 96.

Head green, the angles of the lobes brown and black. Body green, a linear dorsal brown band, widening on joint 2; hairs fine, long, sparse. Food-plant: Birch.—H. G. D.

3655. Acronycta liturata. (Plate CXXIV. fig. 26.)

Acronycta liturata, Smith, Ent. News Philad. viii. p. 151 (1897); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 129, pl. xiii. f. 8; Dyar, Cat. Lep. N. Am. p. 103.

♀. Head and thorax white mixed with some brown and black; 2nd joint of palpi with black band; frons with blackish bar; shoulders and outer edges of patagia with black streaks; tarsi banded black and white; abdomen white irrorated with fuscous and dorsally tinged with brown. Fore wing grey-white slightly tinged with brown in parts and rather thickly irrorated with black; subbasal line represented by double black striæ from costa and spot

below cell; a rather diffused sinuous black streak in submedian fold from base to well beyond antemedial line, which is rather indistinct, double, waved, oblique, angled inwards in submedian fold and bent inwards to inner margin; orbicular and reniform defined by black, the former pure white with some brown in centre, large, round, the latter with dark lunule in centre; medial line rather diffused, very oblique from costa to reniform, dentate below the cell; postmedial line double filled in with white, bent outwards below costa, then strongly dentate, incurved below vein 3, crossed by dark suffusion in submedian interspace from medial line to termen and a dark streak in discal fold, some white points beyond it on costa; a whitish dentate subterminal line with dentate blackish marks beyond it in the interspaces connected with the terminal series of triangular black spots; cilia with faint dark line near base and series of black points at tips. Hind wing white; the veins tinged with brown; the terminal area suffused with brown from apex to vein 2 where there is a dark mark; the underside with the costal area irrorated with brown, a small discoidal spot and curved postmedial series of minute streaks on the veins.

Hab. U.S.A., Oregon, Colorado, Glenwood Springs, 1 ♀, Garfield Co. *Exp.* 48 millim.

3656. Acronycta brumosa. (Plate CXXIV. fig. 27.)

Acronycta brumosa, Guen. Noct. i. p. 52 (1852); Smith, Cat. Noct. N. Am. p. 43.

Apatela persuasa, Harv. Bull. Buff. Soc. Nat. Sci. ii. p. 271 (1875); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 130, pl. iii. f. 11; Dyar, Cat. Lep. N. Am. p. 103.

♂. Head and thorax brownish grey mixed with black and white; palpi with black patch on 2nd joint; frons with black bar; basal joint of antennæ white in front; tegulæ with black medial line and some black near tips; shoulders and outer edges of patagia with black streaks; tibiæ with some black marks, the tarsi banded black and white; abdomen brownish grey irrorated with fuscous, the ventral surface white. Fore wing grey tinged with brown and thickly irrorated with black, the submedian interspace mostly suffused with black to the medial line, some brown suffusion on postmedial area; subbasal line represented by double black striæ from costa; antemedial line double, oblique, waved, angled outwards below costa and inwards below median nervure; orbicular and reniform defined by black, the former white with brown centre, elongate elliptical, the latter with its inner part darkened by the medial line which is very oblique and diffused from costa to reniform, oblique and waved from cell to inner margin; postmedial line double, bent outwards below costa, then dentate, strongly incurved below vein 3 and angled outwards on vein 1, some dark suffusion from it to near termen in discal fold and submedian interspace and some white points beyond it on costa; subterminal line pale, waved,

excurved below vein 7 and incurved in discal and submedian folds, with slight dark streaks beyond it in the interspaces to the terminal series of black lunules, which have blackish spots beyond them on the cilia. Hind wing pure white, the veins slightly tinged with brown; a terminal series of brown lunules with slight spots beyond them on the cilia; the underside with the costal area irrorated with brown, a slight discoidal spot, postmedial spot on costa and minute streaks on the veins from costa to vein 3.

♀. Hind wing with the veins, costal, inner and terminal areas tinged with brown, a slight discoidal spot and curved postmedial line.

Hab. U.S.A., Florida (*Doubleday*), 1 ♀ type, Archer, Texas, 1 ♂, 1 ♀ type *persuasa*, ? Colorado, ? New Mexico. *Exp.* 48–52 millim.

3657. Acronycta velia.

Acronycta velia, Schaus, Trans. Am. Ent. Soc. xxi. p. 223 (1894); Druce, Biol. Centr.-Am., Het. ii. p. 472, pl. 93. f. 4.

♀. Head and thorax white mixed with black; palpi with small black spots on the joints above; pectus and femora white tinged with brown, the tibiæ streaked with black, the tarsi black ringed with white; abdomen white irrorated with black and dorsally tinged with brown. Fore wing white thickly irrorated with black, the area between the reniform and postmedial line white; subbasal line represented by double diffused black striæ from costa and single striga from cell; antemedial line double filled in with white, strong, oblique and waved from costa to submedian fold, then erect, the inner line angled inwards just below median nervure; orbicular and reniform defined by black, the former small, round, white with dark brown centre, the latter large with brown centre and whitish annulus, its upper extremity produced; a medial black line diffused and very oblique from costa to reniform, incurved and sinuous from cell to inner margin; postmedial line double filled in with white, strongly bent outwards below costa, then lunulate, strongly bent inwards from vein 3 to submedian fold, then excurved, some white points with slight black streaks between them beyond it on costa and with blackish suffusion from it to termen between veins 3 and 1; a waved white subterminal line, angled outwards at vein 7 and inwards in submedian fold; a terminal series of small triangular black spots defined on inner side by white lunules and with blackish marks beyond them on the cilia. Hind wing whitish tinged with reddish brown at base, the terminal area suffused with fuscous; cilia chequered white and fuscous; the underside white, the costal and terminal areas slightly irrorated with black, an indistinct diffused oblique brownish medial line, a black discoidal spot, crenulate postmedial line excurved to vein 4, then oblique, and a terminal series of small black lunules.

Hab. Mexico, Jalapa; Guatemala (*Rodriguez*), 1 ♀, Godman-Salvin Coll. *Exp.* 48 millim.

3658. Acronycta inclara. (Plate CXXIV. fig. 28.)

Acronycta hamamelis, Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 141, pl. ii. ff. 1, 2, 3, & pl. xii. f. 12 (nec Guen.).
Acronycta inclara, Smith, Can. Ent. xxxii. p. 335 (1900).
Acronycta brumosa, Dyar, Cat. Lep. N. Am. p. 103 (nec Guen.).

Head and thorax grey-white mixed with fuscous and black, the vertex of thorax paler; palpi whitish at base and with black band on 2nd joint; frons with black bar; tegulæ with diffused black band near base defined by whitish at base; tibiæ streaked with black; the tarsi banded with black; abdomen grey irrorated with fuscous and dorsally suffused with brown, the basal crest whitish. Fore wing grey-white thickly irrorated with fuscous and suffused in parts with brown, the basal area suffused with black to the outer antemedial line leaving some yellowish on base of inner margin; subbasal line represented by double black striæ from costa; antemedial line double, minutely waved, oblique, the inner line angled inwards below the cell; orbicular and reniform defined by black, the former whitish with brown centre, round, the latter with its centre suffused with brown; an indistinct waved medial line; postmedial line double filled in with grey, strongly bent outwards below costa, then minutely waved, below vein 3 bent inwards to lower edge of reniform, some white points beyond it on costa; subterminal line formed of dentate whitish marks slightly angled outwards at vein 7 and inwards in submedian fold; a terminal series of small triangular black spots defined on inner side by whitish lunules; cilia chequered fuscous and whitish with dark line near base and terminal series of black points. Hind wing brown, with indistinct discoidal spot and postmedial line incurved below vein 4; cilia chequered ochreous white and brown; the underside white irrorated with brown, a short black streak in middle of cell of male, large discoidal lunule, curved waved postmedial line, and terminal series of small lunules.

Hab. Canada; U.S.A., Maine, Vermont, New York, Evans Center (*Grote*), 2 ♂, 1 ♀, Distr. of Columbia, Washington, Pennsylvania, New Brighton (*Merrick*), 1 ♂, Minnesota, Dakota, Missouri, Texas and West to the foot of Rocky Mts. *Exp.* 38–40 millim. This is probably a grey variety of *A. hamamelis*.

Larva. Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 143.

Like *A. ovata*, with or without the white dorsal spots.—H. G. D.

3659. Acronycta clarescens. (Plate CXXIV. fig. 29.)

Acronycta clarescens, Guen. Noct. i. p. 54 (1852); Dyar, Cat. Lep. N. Am. p. 101.
Acronycta pruni, Harris, Ent. Corresp. 1869, p. 313; Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 123, pl. iv. f. 4; Smith, Cat. Noct. N. Am. p. 44.

Head and thorax grey-white mixed with dark brown and black; 2nd joint of palpi with black band; tegulæ with blackish

lines at middle and near tips; patagia edged with black, tarsi black ringed with white; abdomen whitish suffused with reddish brown and irrorated with fuscous. Fore wing grey-white thickly irrorated with fuscous brown, the basal area suffused with fuscous to the outer antemedial line leaving the area between the subbasal and antemedial lines pale to the streak in submedian fold; subbasal line represented by double black striæ from costa and single striga from cell, with a black streak beyond it in submedian fold to inner antemedial line; antemedial line double, oblique, waved, excurved in cell, the inner line strong, black; orbicular and reniform white defined by black except above, their centres suffused with brown, the former oblique elliptical; medial line oblique from costa to reniform, dentate from cell to inner margin; postmedial line double filled in with whitish, the outer line black, strongly bent outwards below costa, then minutely waved, below vein 4 bent inwards to lower extremity of reniform and erect to inner margin, some white points beyond it on costa with black striæ between them; subterminal line white with lunulate blackish band on its outer side, dentate, angled inwards at discal and submedian folds; a terminal series of triangular black spots; cilia white with a black line through them. Hind wing whitish uniformly suffused with red-brown; cilia white; the underside white, the costal and terminal areas slightly irrorated with black, a slight black streak in middle of cell, black discoidal lunule, minutely waved postmedial line excurved to vein 4, then incurved, and terminal series of small black lunules.

Ab. 1. Fore wing with ferruginous centre to reniform.

Hab. Canada, Nova Scotia (*Redman*) 1 ♂; U.S.A., Eastern States, New York, Evans Center (*Grote*), 1 ♂, 7 ♀; Trenton Falls (*Doubleday*), 2 ♀ type. *Exp.* 40-42 millim.

Larva. Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 125, pl. vii. ff. 22–23.

Head pale, heavily dotted with black over vertex. Body green or red, with a purple-brown dorsal stripe that widens on joints 7–10; a white **U**-shaped edge to the band on joints 2 and 3; tubercles small, dark, with several obscure hairs. Food-plants: Apple, Cherry, &c.—H. G. D.

*3660. Acronycta minella. (Plate CXXIV. fig. 30.)

Apatela minella, Dyar, J. N.Y. Ent. Soc. vi. p. 41 (1898); id. Cat. Lep. N. Am. p. 102.

♀. Head and thorax grey mixed with black; abdomen dark grey. Fore wing whitish tinged with ochreous and almost uniformly irrorated and suffused with fuscous; a faint black streak below base of cell; subbasal line double, from costa to submedian fold; antemedial line double filled in with whitish, oblique, dentate, strongly angled outwards below costa; orbicular and reniform defined by black, the former round; medial line indistinct, oblique from costa to reniform, inwardly oblique and sinuous from lower

angle of cell to inner margin, a dark streak before it in submedian fold; postmedial line double filled in with whitish, strongly bent outwards below costa, then dentate, strongly incurved below vein 4 and angled outwards on vein 1, some white points beyond it on costa; subterminal line represented by a series of slight pale lunules with dark points beyond them in the interspaces, excurved below vein 7 and at middle and angled inwards at submedian fold; a terminal series of small black lunules; cilia grey mixed with fuscous. Hing wing ochreous white tinged with fuscous, a slight discoidal spot and sinuous postmedial line; a terminal series of black striæ.

Hab. U.S.A., S. Colorado. *Exp.* 36 millim. This species is unknown to me, figured from a drawing from type in U.S. Nat. Mus.

3661. **Acronycta superans.** (Plate CXXIV. fig. 31.)

Acronycta superans, Guen. Noct. i. p. 53 (1852); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 119, pl. i. f. 6; Smith, Cat. Noct. N. Am. p. 43.

Head blackish with white band between antennæ; palpi white with black band on 2nd joint; thorax grey-white, the tegulæ with black line near base and some black scales at tips, the patagia with black scales mixed and black streak on outer edge, the metathorax with brown scales mixed; tibiæ slightly streaked with black, the tarsi black ringed with white; abdomen white irrorated with dark brown, the basal crest red-brown. Fore wing white with slight dark irroration, the base, the antemedial area below the cell, the medial area from cell to vein 1 and a diffused band from costa in and beyond end of cell and from postmedial line to termen between vein 3 and submedian fold black-brown suffused with some yellowish at base on inner margin: subbasal line represented by double black striæ from costa; antemedial line strong, double, oblique, waved; orbicular and reniform defined by black-brown, the former with white centre, erect, elliptical, the latter large; a very oblique black striga from costa to reniform and oblique sinuous line from lower angle of cell to inner margin; postmedial line strong, double filled in with white, strongly bent outwards below costa, then minutely dentate and angled outwards at veins 4, 3, then strongly incurved and angled outwards at vein 1, some white points with dark streaks between them beyond it on costa; subterminal line white, excurved below costa and at middle, angled inwards at discal fold to near postmedial line, angled inwards and interrupted at submedian fold, with dark brown beyond it from below costa to vein 4; a terminal series of small black lunules with black-brown spots beyond them on the cilia. Hind wing whitish uniformly suffused with reddish brown; cilia white mixed with some brown; the underside white, the costal and the terminal areas irrorated with brown and the veins tinged with brown; a dark streak in cell from base to near the dark discoidal lunule, a crenulate postmedial line excurved to vein 4, then oblique, and terminal series of small black lunules.

Hab. Canada (*Norman*), 1 ♀, Ottawa (*Young*), 1 ♂; U.S.A., New York (*Doubleday*), 1 ♀ type, Evans Center (*Grote*), 3 ♂, 4 ♀, Distr. of Columbia, Washington, and West to the Mississippi and Central States. *Exp.* 50–52 millim.

Larva. Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 121; Saunders, Ins. Inj. Fruits, p. 166, f. 174.

Head pale, thickly dotted with brown, a red spot on vertex of each lobe. Body green on the sides, an even narrow dorsal brown stripe, widened on joint 1, narrowed on the incisures; hairs sparse, fine, almost single. Food-plants: Apple, Birch, &c.—H. G. D.

3662. Acronycta subochrea. (Plate CXXIV. fig. 32.)

Acronycta subocrea, Grote, Bull. Buff. Soc. Nat. Sci. ii. p. 153 (1874); Smith, Cat. Noct. N. Am. p. 42.

Acronycta brumosa, Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 117, pl. xiii. f. 1 (nec Guen.).

Apatela hamamelis, Dyar, Cat. Lep. N. Am. p. 102 (nec Guen.).

Head and thorax grey-white largely mixed with fuscous black; palpi white at base, the 2nd joint with black band; lower part of frons whitish; a white bar between antennæ; shoulders and outer edges of patagia with black stripes; tibiæ with slight black streaks, the tarsi black ringed with white; abdomen white irrorated with dark brown and dorsally clothed with red-brown hair except towards extremity, the basal crest fuscous and white. Fore wing bluish white thickly irrorated with very dark brown and suffused with dark brown below the cell to antemedial line, in reniform and below end of cell and beyond postmedial line; some yellowish at base of inner margin; subbasal line represented by double dark striæ from costa; antemedial line rather indistinct, double, the lines rather widely separated towards costa, oblique, minutely waved, bent inwards to inner margin; orbicular and reniform large, defined by black, open above, the former round, the latter defined by black points on outer side; a very oblique blackish striga from costa to reniform and minutely waved line from lower angle of cell to inner margin with short diffused blackish streak before it above vein 1; postmedial line blackish, double at costa, strongly bent outwards below costa, then dentate, incurved below vein 3 and angled outwards at vein 1; some white points with black streaks between them beyond it on costa; an indistinct minutely waved pale subterminal line; a terminal series of small black spots; cilia mostly black at base and white at tips. Hind wing whitish tinged with olive-brown, the terminal area suffused with fuscous, in female darker; cilia white with a dark line through them; the underside white irrorated with dark brown, a dark streak in base of cell, black discoidal spot, crenulate postmedial line bent inwards to costa and with minute dark streaks on the veins, and terminal series of slight lunules.

Hab. Canada, Ontario; U.S.A., South to Virginia and West to

Rocky Mts., New York, Evans Center (*Grote*), 1 ♂, 2 ♀ type, Distr. of Columbia, Washington, Pennsylvania, Lancaster, Wisconsin, Colorado, Garfield Co. *Exp.* 46 millim.

Larva. Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 118.

Head brownish, dotted with red and black over the face. Body green, a darker lateral shade, the dorsum paler and containing a transverse blackish patch on joints 5, 8, 9, and 12, the latter small; hairs fine, rather long, several from each tubercle. Food-plant: Witch hazel (*Hamamelis*).—H. G. D.

3663. Acronycta noctivaga. (Plate CXXV. fig. 1.)

Acronycta noctivaga, Grote, Proc. Ent. Soc. Philad. ii. p. 437, pl. ix. f. 3 (1864); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 156, pl. i. f. 11; Smith, Cat. Noct. N. Am. p. 42.

Head and thorax white mixed with black-brown; 2nd joint of palpi with black band; shoulders with blackish streaks; tibiæ banded with blackish; abdomen whitish irrorated with fuscous and dorsally suffused with brown, the basal crest whitish with black tip. Fore wing white thickly irrorated with black-brown, the basal area suffused with black-brown to antemedial line leaving some yellowish white on base of inner margin, and diffused black-brown bands beyond the medial and postmedial lines; subbasal line represented by double black striæ from costa and cell filled in with white; antemedial line double filled in with white, strongly waved, oblique; the medial area with black-brown fascia above vein 1; orbicular and reniform defined by black, the former very small, round, the latter filled in with brown; a diffused somewhat dentate medial line oblique from costa to median nervure, then inwardly oblique; postmedial line double filled in with white, bent outwards below costa, then dentate, incurved below vein 3 and angled outwards on vein 1, some white points beyond it on costa; subterminal line represented by a series of dentate whitish marks, somewhat angled outwards at vein 7 and inwards at discal and submedian folds, with blackish streaks in the interspaces from it to the terminal series of black points with blackish streaks from them intersecting the cilia. Hind wing whitish uniformly suffused with reddish brown; cilia whitish at tips; the underside whitish, the costal area irrorated with brown, a blackish discoidal spot.

Hab. Canada (*Normam*), 1 ♂, Ontario, Orillia (*Bush*), 1 ♀; U.S.A., Massachusetts, New York, Evans Center (*Grote*), 1 ♂, 4 ♀, Distr. of Columbia, Washington, Illinois, Oregon, Portland, Colorado, New Mexico. *Exp.* 38–40 millim.

Larva. Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 157, pl. viii. ff. 27, 28.

Head black. Body blackish with a faint red subventral band; warts large, the hairs short, dense, bristly, black mixed with some soft greyish ones. Food-plants: low bushes.—H. G. D.

3664. Acronycta carbonaria. (Plate CXXV. fig. 2.)

Acronycta carbonaria, Græs. Berl. ent. Zeit. 1889, p. 252; Staud. Cat. Lep. pal p. 133.
Acronycta brumosa, Leech, P. Z. S. 1889, p. 476 (nec Guen.).

♂. Head and thorax whitish tinged with brown and irrorated with black; palpi brown, whitish at base; frons with blackish bar; tegulæ and patagia edged with blackish; tarsi banded with black; abdomen grey dorsally suffused with brown except at base. Fore wing grey almost wholly suffused with dark brown and irrorated with black, the area just before antemedial line paler; subbasal line double, waved, from costa to submedian fold; antemedial line double, waved, oblique, the lines widely separated, with black streak in submedian fold from its inner edge to well beyond it; orbicular and reniform large, defined by black, the former with white annulus on inner side and black point in upper part of centre, the latter with slight black lunule on inner side of centre; a very oblique dark striga from costa to reniform and indistinct oblique waved line from lower angle of cell to inner margin; postmedial line double, the lines rather widely separated and with some white between them, bent outwards below costa, then dentate and produced to short black streaks on the veins, incurved below vein 3, some white points beyond it on costa; a strongly waved whitish subterminal line slightly defined by blackish on outer side, a terminal series of black points with blackish marks beyond them on the cilia. Hind wing white, the veins of terminal half brownish; a brownish postmedial bar from costa and slight lunulate terminal line; the underside with the costal area tinged and irrorated with brown, a blackish discoidal lunule, indistinct waved postmedial line from costa to vein 4 with dark spots on and below costa, small spot on costa near apex, and terminal series of small lunules from apex to vein 2.

♀. Hind wing with indistinct curved postmedial line, the terminal area suffused with brown and the inner area tinged with brown.

Hab. E. Siberia, Ussuri; Japan, Yokohama (*Pryer*), 4 ♂, 2 ♀; Corea. *Exp.* 46–48 millim.

3665. Acronycta subornata.

Acronycta subornata, Leech, P. Z. S. 1889, p. 477, pl. i. f. 6.
Acronycta brunnea, South, ined.

Head and thorax grey-white mixed with dark brown and black; palpi with black patch on 2nd joint; patagia edged with blackish; tarsi blackish ringed with white; abdomen reddish brown, the ventral surface whitish. Fore wing grey-white almost wholly suffused with dark red-brown and irrorated with black, the area just before antemedial line and the costal area beyond antemedial line rather whiter; subbasal line double, waved, from costa to

submedian fold in which there is a slight black streak from its inner edge to beyond antemedial line which is double, the lines, rather widely separated, waved, oblique; orbicular and reniform large, defined by black, the former rather erect elliptical, open above and with white annulus on inner side and below; a very oblique dark striga from costa to reniform and oblique waved line from lower angle of cell to inner margin; postmedial line double filled in with some white, strongly bent outwards below costa, then dentate, incurved below vein 3 and angled outwards on vein 1, some white points beyond it on costa; a subterminal series of whitish lunules in the interspaces, incurved below vein 3; a terminal series of black points defined by slight whitish lunules. Hind wing yellow-brown, the terminal area dark brown, a slight discoidal spot and postmedial line oblique below vein 4; cilia whitish at tips; the underside whitish tinged with brown, the costal and terminal areas irrorated with brown, a blackish streak in middle of cell, large discoidal spot, postmedial line waved from costa to vein 4, then oblique, diffused subterminal band and terminal series of slight lunules.

Ab. 1. *brunnea*. Fore wing more uniform brown with less grey.

Hab. Japan, Yokohama (*Pryer*), 4 ♀ type; Corea, Gensan (*Ito*), 1 ♀. *Exp.* 42–48 millim. Type† *brunnea* in Coll. Wileman.

3666. **Acronycta afflicta.** (Plate CXXV. fig. 3.)

Acronycta afflicta, Grote, Proc. Ent. Soc. Philad. ii. p. 438, pl. ix. f. 4 (1864); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 127, pl. i. f. 15; Smith, Cat. Noct. N. Am. p. 42.

Acronycta dolens, Druce, Biol. Centr.-Am., Het. i. p. 260, pl. 26. f. 7 (1889).

Head and thorax black mixed with white and some pale reddish brown; 2nd joint of palpi with black band; frons with dark bar; tegulæ with the basal half blackish, the terminal half pale with black lines at middle and near tips; disks of patagia and thorax whitish; fore tibiæ and tarsi banded black and white: abdomen fuscous brown, the basal crest and ventral surface whitish. Fore wing reddish brown mixed with some grey and mostly suffused and irrorated with black, some whitish at base of inner margin; subbasal line double, waved, from costa to submedian fold; antemedial line indistinct, double, waved, oblique; orbicular and reniform defined by black, the former whitish with brown centre, round; an oblique dark bar from middle of costa and oblique waved line from lower angle of cell to inner margin; postmedial line double, strongly bent outwards below costa, then dentate, incurved below vein 4, some white points beyond it on costa; a dentate whitish subterminal line; a terminal series of rather triangular spots defined by slight whitish lunules; cilia whitish with a brown line near base and terminal series of brown lunules. Hind wing white, the veins streaked with brown; the terminal

area suffused with brown from apex to vein 2; a terminal series of dark points; cilia white mixed with brown; the underside with the costal and terminal areas irrorated with brown, the veins of terminal area streaked with brown, a blackish discoidal spot, curved waved postmedial line with blackish spot at costa and slight dark streaks on the veins and terminal series of small lunules.

Hab. Canada; U.S.A., Massachusetts, New York, Florida (*Doubleday*), 1 ♂, Missouri, St. Louis, Texas, 2 ♀, West to the Rocky Mts.; Mexico, Jalapa (*Hoege*), 1 ♂ type *dolens*, Godman-Salvin Coll. *Exp.* 40–46 millim.

Larva. Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 128, pl. v. ff. 1, 2.

Head brown, mottled with darker on the face. Body robust, brown, with red-brown dorsal and lateral stripes; hairs of tubercle ii. single, long, black, those of joints 3–7 slightly spatulate. Food-plant: Oak.

3667. Acronycta hamamelis. (Plate CXXV. fig. 4.)

Acronycta hamamelis, Guen. Noct. i. p. 52 (1852); Smith, Cat. Noct. N. Am. p. 44.

Head and thorax grey largely mixed with brown and black; palpi whitish at base and with black band on 2nd joint; frons with black bar; tegulæ with blackish line near base; tibiæ streaked with black, the tarsi banded with black; abdomen grey-brown thickly irrorated with fuscous and with dorsal series of slight dark tufts of hair, the basal crest with some white. Fore wing grey-white almost wholly suffused with fuscous brown and thickly irrorated with black; subbasal line represented by double black striæ from costa; antemedial line double, minutely waved, oblique; orbicular and reniform defined by black, the former with brown centre and whitish annulus, round, the latter with its centre suffused with brown and slight pale annulus; an indistinct curved medial line; postmedial line double, strongly bent outwards below costa, then minutely waved, incurved below vein 3 to lower edge of reniform, some pale points beyond it on costa; an indistinct dentate whitish subterminal line angled inwards in submedian fold; a terminal series of small triangular black spots defined on inner side by slight whitish lunules; cilia whitish with fine waved blackish line near base and terminal series of points. Hind wing brown with traces of discoidal spot and sinuous postmedial line; cilia whitish with brown line through them; the underside white irrorated with brown, a slight dark streak in middle of cell of male, a black discoidal lunule, curved waved postmedial line, and terminal series of small black lunules.

Hab. U.S.A. (*Doubleday*), 1 ♂, co-type, Pennsylvania, 1 ♀, Grote Coll., Georgia, Virginia. *Exp.* 42 millim.

Larva. Guen. Noct. i. p. 52.

Dorsal area yellowish grey, the ventral area ferruginous red, the

two colours separated by a dark green lateral line; six dorsal green patches; subdorsal line fine, green; head pale; anal segment slightly humped; warts each with one hair. Food-plant: *Hamamelis virginiana.*

3668. **Acronycta increta.** (Plate CXXV. fig. 5.)

Acronycta increta, Morr. Proc. Bost. Soc. N. H. xvii. p. 131 (1874); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 144, pl. xii. f. 13; Smith, Cat. Noct. N. Am. p. 44.

Head and thorax white mixed with brown and fuscous; 2nd joint of palpi with black band; frons with blackish bar; tibiæ slightly streaked with black, the tarsi banded with black; abdomen grey thickly irrorated with brown, the ventral surface whitish. Fore wing grey thickly irrorated with fuscous and suffused in parts with brown, the basal area suffused with black to outer edge of antemedial line leaving the base of inner margin whitish and the area between subbasal and antemedial lines greyer to submedian fold; subbasal line double, from costa to submedian fold; antemedial line double, minutely waved, oblique; orbicular and reniform whitish defined by black and with red-brown centres, both erect elliptical, a black bar from costa to orbicular; postmedial line double, bent outwards below costa, then minutely waved and with short black streaks beyond it on the veins, incurved below vein 3, some whitish points beyond it on costa; a whitish subterminal line angled outwards at veins 7, 6, 4, 3; a terminal series of small triangular black spots defined by whitish lunules on inner side; cilia chequered white and brown and with dark line through them. Hind wing greyish wholly suffused with reddish brown; cilia white with small brownish spots from apex to vein 2; the underside whitish slightly tinged and irrorated with brown, a blackish discoidal spot, traces of a postmedial line with dark spots at discal and submedian folds, and terminal series of small lunules.

Hab. Canada, Manitoba, Cartwright (*Heath*), 1 ♀; U.S.A., New York, Evans Center (*Grote*), 1 ♂, 1 ♀, Beverley, 1 ♀ type, New Jersey, Texas, New Mexico. *Exp.* 34 millim.

3669. **Acronycta retardata.** (Plate CXXV. fig. 6.)

Microcœlia retardata, Wlk. Can. Nat. & Geol. vi. p. 38 (1861); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 145, pl. ii. f. 5 & pl. xii. f. 14; Smith, Cat. Noct. N. Am. p. 45.

Acronycta dissecta, Grote & Rob. Trans. Am. Ent. Soc. iii. p. 178, pl. ii. f. 81 (1870).

Head and thorax white mixed with brown; palpi with the 2nd joint black above; tegulæ with diffused black medial line; shoulders and outer edges of patagia with black streaks; fore tarsi banded black and white; abdomen white dorsally tinged with brown. Fore wing white slightly irrorated with fuscous, the basal area thickly irrorated; subbasal line double, waved, from costa to sub-

median fold in which there is a short black streak before it; antemedial line double, with short black streaks on each line on the veins, the inner line angled inwards below the cell and the outer with small black spot on it; orbicular and reniform defined by fuscous and with slight dark centres, the former round; postmedial line double, strongly bent outwards below costa, then dentate, incurved below vein 3, with brown suffusion beyond it to near termen between veins 6 and 4 and from vein 3 to submedian fold, and some white points on costa with dark marks between them; subterminal line absent; a terminal series of small round black spots; cilia with a slight black line near tips. Hind wing greyish suffused with brown and with terminal series of slight black striæ; cilia white with a slight brown line through them; the underside white tinged in parts with brown, a large black discoidal lunule and rather diffused, curved, waved brown postmedial line.

Hab. CANADA; U.S.A., Massachusetts (*Packard*), 1 ♂, New York, Schenectady (*Lintner*), 1 ♂, Evans Center (*Grote*), 1 ♂, 1 ♀, Pennsylvania, Philadelphia, 1 ♀ type, Virginia. *Exp.* 30–34 millim.

Larva. Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 146.

Head red-brown. Body whitish, each segment with five purple-brown transverse bands dorsally, the sides and feet pale. Food-plant: Maple.—H. G. D.

3670. Acronycta cæsarea. (Plate CXXV. fig. 7.)

Acronycta cæsarea, Smith, J. N.Y. Ent. Soc. xiii. p. 191 (1905).

♀. Head and thorax white mixed with black-brown with an olive tinge; frons with black bar; patagia with dark edges; tarsi blackish ringed with white; abdomen fuscous brown with pale segmental lines, the ventral surface whitish irrorated with brown. Fore wing whitish thickly irrorated and suffused with fuscous brown with an olive tinge, the medial area slightly paler; subbasal line blackish, double, waved, from costa to submedian fold in which there is a slight black streak from it to outer edge of antemedial line, which is double, oblique, waved, angled inwards in submedian fold; orbicular and reniform small, white irrorated with brown and defined by blackish, the former round; medial line represented by an oblique bar from costa and oblique sinuous line from lower angle of cell to inner margin; postmedial line double filled in with whitish, bent outwards below costa, then dentate, strongly incurved below vein 4, some alternating white and dark points beyond it on costa; subterminal line absent; a terminal series of black points defined on inner side by slight whitish lunules; cilia chequered fuscous brown and white and with dark line through them. Hind wing greyish uniformly suffused with brown; cilia white with a dark line through them; the underside whitish, the costal area and terminal area to vein 3 irrorated with brown, a dark discoidal spot,

bar at middle of costa, diffused sinuous postmedial line, and terminal series of black striæ.

Hab. U.S.A., New Jersey, Essex Co. Park, Kansas (*Snow*), 2 ♀. *Exp.* 26–30 millim.

3671. Acronycta impleta. (Plate CXXV. fig. 8.)

Acronycta impleta, Wlk. ix. 57 (1856); Smith, Cat. Noct. N. Am. p. 42.
Acronycta luteicoma, Grote & Rob. Trans. Am. Ent. Soc. iii. p. 179, pl. 2. f. 83 (1870); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 152, pl. i. f. 5; Smith, Cat. Noct. N. Am. p. 42.

Head and thorax grey largely mixed with brown; palpi white with black band on 2nd joint; tegulæ and patagia edged with brown; shoulders streaked with black; tibiæ slightly streaked with black, the mid tibiæ with black spot at base, the tarsi banded with fuscous; abdomen red-brown. Fore wing grey almost wholly suffused and irrorated with brown; subbasal line represented by double black striæ from costa and cell; antemedial line double, oblique, waved, angled inwards on vein 1; orbicular and reniform defined by black, their centres suffused with brown, the former round, the latter with the black on outer edge reduced to points; medial line minutely waved, very oblique from costa to reniform, incurved below the cell; postmedial line double, the inner line indistinct, bent outwards below costa, then minutely dentate, excurved to vein 3, then incurved, filled in with whitish lunules, the one below submedian fold more prominent, some white points beyond it on costa; a subterminal series of whitish spots, slightly excurved at vein 7 and incurved below vein 3; a terminal series of small black spots; cilia with a slight dark line through them. Hind wing whitish uniformly suffused with red-brown; cilia white; the underside white faintly tinged with red-brown, a slight discoidal spot and traces of postmedial line from costa to vein 4.

Hab. Canada; U.S.A., Maine, New York, 3 ♂, Distr. of Columbia, Illinois, Georgia, Kansas (*Snow*), 1 ♂, 1 ♀, Texas, ? California; hab. ign. 1 ♀ type. *Exp.* 40–48 millim.

Larva. Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 153, pl. vi. f. 16.

Head shining black, body black with pale dots; a reddish substigmatal band; narrow broken dorsal and subdorsal lines; warts large; the hairs in dense tufts, long, fine; dense pale brown tufts subdorsally on joints 3 to 6, 12 and 13; four dense black tufts on joint 5; two short black pencils on joint 12. Food-plants: *Prunus*, *Populus*, &c.

3672. Acronycta illita. (Plate CXXV. fig. 9.)

Acronycta illita, Smith, Ent. News Philad. viii. p. 152 (1897); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 151, pl. xi. f. 12; Dyar, Cat. Lep. N. Am. p. 104.

♀. Head and thorax black mixed with grey-white; frons with black bar; tarsi banded black and white; abdomen grey irrorated

with black, the basal crest black and white. Fore wing white very thickly irrorated with black; subbasal line represented by double black striæ from costa and cell; antemedial line double filled in with whitish, oblique, waved; orbicular and reniform defined by black and with some black suffusion in centres, the former irregularly rounded, the latter lunulate; traces of a medial line, oblique from costa to reniform and erect from submedian fold to inner margin, with a blackish mark before it above vein 1; postmedial line double, black, filled in with white lunules except towards costa, bent outwards below costa, then dentate, incurved below vein 4 and angled outwards at vein 1, some whitish points beyond it on costa; subterminal line indistinct, whitish, waved, slightly defined on outer side by black; a terminal series of black spots. Hind wing grey suffused and irrorated with fuscous; the underside white, the costal and terminal areas slightly irrorated with fuscous, a dark discoidal lunule and indistinct curved postmedial line.

Hab. Canada, Manitoba, Aweme (*Criddle*), Cartwright (*Heath*), 1 ♀; U.S.A., Colorado, Denver, Glenwood Springs, *Exp.* 50 millim.

Larva. Head shining black. Body black, dotted with pale, with a reddish substigmatal band and narrow broken dorsal and subdorsal lines; warts large, the hairs in dense tufts, long, fine; dense pale brown tufts subdorsally on joints 3 to 6, 12, and 13; four dense black tufts on joint 5; two short black pencils on joint 12. Food-plants: *Prunus*, *Populus*, &c.—H. G. D.

3673. **Acronycta pruinosa.** (Plate CXXV. fig. 10.)

Acronycta pruinosa, Guen. Noct. i. p. 53 (1852); Hmpsn Moths Ind. ii. p. 242.
Polia soluta, Wlk. xxxiii. 723 (1865).

Head and thorax white slightly tinged with brown in parts and irrorated with black; palpi with the 2nd joint black at sides; tarsi banded with black; abdomen white suffused with pale brown except at base. Fore wing white thickly irrorated with brown and with some brownish suffusion beyond the medial and postmedial lines; subbasal line represented by a black striga from costa and curved black mark below cell with white spot on its inner side; antemedial line double, the lines widely separated on costal half and with black points on them from costa to median nervure, oblique, waved; orbicular white defined by black and with brown point in centre, round; reniform defined by black, on outer side reduced to points, its centre suffused with brown and with black lunule on inner side; a diffused dark patch on middle of costa and oblique slightly waved line from cell to inner margin; postmedial line double filled in by white lunulate marks, bent outwards below costa, then dentate, excurved to vein 3, then incurved, some white points beyond it on costa; a subterminal series of slight white marks in the interspaces; a terminal series of small black lunules defined by whitish lunules and with blackish marks beyond them

on the cilia. Hind wing white tinged with pale yellow-brown, the terminal area slightly darker; an indistinct postmedial line defined by whitish on outer side; cilia white with series of slight dark points; the underside white tinged with brown, a brownish mark on middle of costa, indistinct discoidal spot and curved postmedial line.

Hab. Kashmir, Dana (*McArthur*), 1 ♂; Punjab, Sulu, Sultanpur (*G. Young*), 3 ♂, Simla (*Harford*), 1 ♂, 1 ♀, Kasauli, 1 ♂, Dharmsála (*Hocking*), 1 ♂, 1 ♀; N. India, 1 ♀ type *soluta*; Sikhim, 1 ♂; Assam; Java (*Horsfield*), 1 ♂ type. *Exp.* 36–46 millim.

3674. Acronycta consanguis. (Plate CXXV. fig. 11.)

Acronycta consanguis, Butl. A. M. N. H. (5) iv. p. 358 (1879); Staud. Cat. Lep. pal. p. 133.
Acronycta asiatica, Pouj. Bull. Soc. Ent. Fr. (6) viii. p. 20 (1888).

Head and thorax white mixed with black-brown; 2nd joint of palpi with black patch at sides; hind tibiæ with black streaks, the tarsi banded with blackish; abdomen white suffused with reddish brown. Fore wing white irrorated with brown and fuscous; subbasal line represented by slight double striæ from costa and curved black mark below cell with white spot on its inner edge; antemedial line double filled in with whitish, the lines widely separated towards costa and the outer line very indistinct except at costa and inner margin, oblique, waved; orbicular white defined by black on outer side, slightly on inner, somewhat elliptical; reniform defined by black on inner side and by black points on outer; a fuscous patch on middle of costa and an oblique rather diffused line from lower angle of cell to inner margin; postmedial line black defined on inner side by lunulate white marks, bent outwards below costa, then dentate, excurved to vein 3, then incurved and angled outwards at vein 1, some brown suffusion beyond it and white points with minute black streaks between them on costa; traces of a whitish subterminal line; a terminal series of small black lunules; cilia white with series of blackish spots near base. Hind wing white suffused with pale brown except on inner area; a diffused brownish postmedial line and terminal band; cilia white intersected with pale brown; the underside white faintly tinged with brown, the costal area irrorated with brown, a brown patch on middle of costa, slight discoidal spot, and postmedial line excurved to vein 5, then incurved.

Hab. ? E. Siberia, Ussuri; Japan, Tokio (*Fenton*), 1 ♀, Yokohama (*Pryer*, *Manley*), 4 ♂, 3 ♀ type; W. China, Chang-yang (*Pratt*), 1 ♂, 1 ♀, Moupin (*David*), type † ♂ *asiatica* in Mus. Paris. *Exp.* 42–48 millim.

*3675. Acronycta albistigma. (Plate CXXV. fig. 12.)

Acronycta albistigma, South, ined.

♂. Head and thorax white mixed with brown; palpi with the 1st and 2nd joints black above; antennæ with the basal joint black at extremity behind; tegulæ with faint dark band before the tips which are whitish; tarsi brown ringed with white; abdomen ochreous whitish tinged with brown. Fore wing grey-white thickly irrorated with fuscous; subbasal line represented by double black striæ from costa and cell, the latter filled in with white; antemedial line rather indistinct, double, oblique, waved, angled inwards on vein 1; orbicular pure white defined at sides by black and with some brown scales in centre, rather oblique elliptical; reniform defined at sides by black and white points; medial line represented by a diffused oblique fuscous bar from costa and an indistinct oblique dentate line from lower angle of cell to inner margin; postmedial line double, the inner line indistinct, filled in by white lunules between veins 7 and 4 and 3 and 1, bent outwards below costa, then dentate, bent inwards below vein 4 and ending on inner margin near tornus, some dark suffusion beyond it between veins 8 and 4 and below vein 2, and some white points on costa; a waved white subterminal line; a series of small black spots on termen and base of cilia defined by whitish lunules on inner side. Hind wing white, the basal area tinged with brownish yellow, the veins and terminal area suffused with brown; an indistinct curved postmedial line; cilia ochreous white with a series of fuscous spots; the underside white with slight dark spot in middle of cell, blackish discoidal lunule and postmedial line maculate and excurved to vein 5, then oblique.

Hab. Japan, type † ♂ in Coll. Wileman. *Exp.* 50 millim.

3676. Acronycta rumicis.

Noctua rumicis, Linn. Syst. Nat. ed. x. p. 516 (1758); Esp. Schmett. iv. pl. 117. ff. 7–9; Hübn. Eur. Schmett., Noct. f. 9; Frr. Neue Beitr. pl. 543; Steph. Ill. Brit. Ent., Haust. iii. p. 42; Dup. Lép. Fr. vi. p. 241, pl. 88. f. 2; Staud. Cat. Lep. pal. p. 133.
Acronycta salicis, Curt. Brit. Ent. v. pl. 136 (1829).
Acronycta diffusa, Wlk. xi. 708 (1857).
Acronycta indica, Moore, P. Z. S. 1867, p. 47; Hmpsn. Moths Ind. ii. p. 203, & iv. p. 509.
Acronycta turanica, Staud. Stett. ent. Zeit. 1888, p. 65; id. Rom. Mém. v. pl. 8. f. 5.
Acronycta alnoides, Geest, Allg. Zeit. Ent. viii. p. 310 (1903).

Head and thorax white mixed with brown and black; 2nd joint of palpi with black band; frons with black bar; tarsi black ringed with white; abdomen whitish dorsally suffused with ochreous and brown, the basal crest mixed with black. Fore wing white very thickly irrorated with brown, the inner and postmedial areas suffused with brown; subbasal line represented by double black striæ from costa and single striga from cell with black streak from

it to antemedial line, which is strong, black, double, oblique, waved, angled outwards below costa and inwards on vein 1; orbicular and reniform defined by black, the former round with brown point in centre, the latter with brown lunule on inner side of centre; an oblique dark striga from costa to reniform and waved line from cell to inner margin; postmedial line double with white lunule on it in submedian interspace, bent outwards below costa, then dentate, incurved below vein 3 and angled outwards on vein 1, some white points beyond it on costa; an irregularly waved white subterminal line excurved below costa and at middle and with series of black spots on its outer edge; a terminal series of small triangular black spots; cilia mixed with brown at base, the tips white with series of black points. Hind wing red-brown, the cilia white with some brown at base; the underside white tinged and irrorated with red-brown, a slight discoidal point.

Ab. 1. *salicis.* Fore wing suffused with fuscous brown, leaving the lunule on postmedial line and the subterminal line white.

Ab. 2. *alnoides.* Fore wing with the inner area suffused with fuscous to postmedial line and with diffused oblique fascia beyond postmedial line below vein 3.

Ab. 3. Larger and darker.—Japan and W. China.

Ab. 4. *turanica.* Fore wing sparsely irrorated with fuscous and with fuscous suffusion below submedian fold and beyond postmedial line only.

Hab. Britain, Scotland, Leech Coll., England (*Gregson*), Leech Coll.; France; Denmark, Dohlmann Coll.; Germany, Zeller and Leech Colls.; Austria; Hungary; Switzerland, Frey Coll.; Spain; Corsica, Frey Coll.; Italy; Morocco. Tangier (*Walsingham*), 1 ♂; Scandinavia; Russia, Livonia, Zeller Coll.; Cyprus (*Miss Bate*), 1 ♀; Armenia; Asia Minor, Brussa, 1 ♂, 1 ♀, Zeller Coll., Amanus Mts., 1 ♀; Syria, 1 ♀, Leech Coll., Bagdad (*Loftus*), 1 ♀ type *diffusa*; W. Turkestan, Ferghana, 1 ♂, 1 ♀, Sarawschan, Issyk Kul; E. Turkestan, Ili; E. Siberia; Japan, Hakodaté (*Whiteley*), 1 ♂, 1 ♀, Tokio (*Maries*), 1 ♂, 1 ♀, Yokohama (*Jonas, Pryer, Leech*), 2 ♂, 3 ♀, Nagahama (*Leech*), 1 ♀, Kiushiu, 1 ♀; Corea, Gensan (*Leech*), 1 ♀; C. China, Ichang (*Pryer*), 1 ♀, Shipy-shan (*Pratt*), 1 ♂; W. China, Chang-yang (*Pratt*), 2 ♀, Omei-shan, 1 ♀, Nitou, 1 ♀, Ta-chien-lu (*Pratt*), 1 ♀, Wa-ssu-kou, 1 ♂, Kia-ting-fu, 1 ♂, Chia-kou-ho (*Pratt*), 1 ♂, Pu-tsu-fang, 1 ♀, Kwei-chow, 1 ♂; Sikhim (*Russell*), 1 ♂ type *indica*. *Exp.* 34–46 millim.

Larva. Meyr. Brit. Lep. p. 143; Barrett, Lep. Brit. iii. p. 267, pl. 123. f. 1.

Dark grey-brown with pale marblings; a dorsal series of black patches enclosing orange-red spots; subdorsal series of white spots; subspiracular line waved, white or pale yellow, the tubercles orange-red; fascicles of pale ochreous or reddish hair mixed with blackish hair; somites 4 and 11 somewhat prominent above; head black streaked with brownish ochreous. Food-plants: *Polygonum, Salix*, Hawthorn, *Veronica*, &c. 8–9.

3677. Acronycta lutea.

Acronycta lutea, Brem. & Grey, Motsch. Et. Ent. i. p. 65 (1852); Brem. Lep. Ost-Sib. pl. 4. f. 7; Oberth. Ét. Ent. x. p. 18, pl. 2. f. 14; Staud. Cat. Lep. pal. p. 133.
Pharetra leucoptera, Butl. Trans Ent. Soc. 1881. p. 595.

Head and thorax grey-white mixed with black-brown; palpi with blackish band on 2nd joint; patagia edged with blackish; tarsi banded black and white; abdomen greyish suffused with brown and with yellow towards base, the ventral surface whitish. Fore wing whitish almost wholly suffused and irrorated with black-brown, the inner and postmedial areas slightly darker; subbasal line represented by double black striæ from costa and single striga from cell with slight black streak from it to antemedial line, which is double, the lines widely separated, oblique, waved, angled outwards below costa; orbicular and reniform defined by black, the former small, round, with slight whitish annulus; a dark striga from middle of costa and faint dark patch above middle of vein 1; postmedial line double with white lunule on it below submedian fold, the inner line indistinct, bent outwards below costa, then dentate, incurved below vein 3 and angled outwards on vein 1, some white points beyond it on costa; a subterminal series of whitish spots in the interspaces with blackish spots on their outer side conjoined by slight streaks to the terminal series of points. Hind wing orange-yellow, the basal area slightly tinged with brown; the terminal area broadly black-brown with irregular inner edge angled inwards at vein 2 and pale yellow patch on termen in submedian interspace; cilia whitish; the underside yellowish white, the costal area irrorated with brown, a slight discoidal lunule and diffused subterminal band forming large blackish patches between vein 3 and submedian fold and vein 1.

Ab. 1. *leucoptera*. Hind wing whitish slightly tinged with yellow.

Ab. 2. Hind wing deep orange-yellow.

Hab. E. Siberia, Dahuria, Amurland, Ussuri; Japan, Oiwake (*Pryer*), 4 ♀, Yokohama (*Pryer*), 2 ♂ type *leucoptera*; Corea, Gensan (*Leech*), 1 ♂; W. China, Chang-yang (*Pratt*), 1 ♂. *Exp.* 46–48 millim.

3678. Acronycta catocaloida. (Plate CXXV. fig. 13.)

Acronycta catocaloida, Græs. Berl. ent. Zeit. 1888, p. 313; Staud. Cat. Lep. pal. p. 133.

♀. Head and thorax white mixed with black; palpi white with black band on 2nd joint; patagia edged with blackish; tarsi banded black and white: abdomen greyish thickly irrorated with dark brown and dorsally suffused with reddish brown towards base. Fore wing whitish almost wholly suffused with dark brown and irrorated with black; subbasal line indistinct, double, waved, from costa to submedian fold; antemedial line rather indistinct, double, waved, oblique; orbicular and reniform defined by black,

the former white with brown centre, round; an indistinct waved medial line; postmedial line double filled in with white lunules, bent outwards below costa, then dentate, excurved to vein 3, then incurved, some white points beyond it on costa; an ill-defined lunulate white subterminal line conjoined below apex and at middle to the white lunules on termen defining the terminal series of small black lunules. Hind wing yellow with paler patch beyond the cell from costa to vein 4; the basal area suffused with brown; a black discoidal lunule; the terminal area broadly black-brown with sinuous inner edge and leaving a narrow pale yellow terminal band with series of dark points on it; cilia pale yellow; the underside pale yellow irrorated with brown except in submedian interspace, an elongate dark mark in middle of cell, large black discoidal spot, lunulate postmedial line incurved below vein 3 and with diffused brown band beyond it interrupted at discal fold.

Hab. E. Siberia, Amurland, Ussuri; Japan, Hakodaté (*Leech*), 1 ♀. *Exp.* 46 millim.

Sect. II. (*Triæna*). Thorax clothed with hair and hair-like scales mixed with a few scales.

A. Fore wing with the orbicular and reniform conjoined by a black streak.

a. Fore wing with black streak in discal fold beyond postmedial line.

a[1]. Fore wing with quadrate black patch between orbicular and reniform, the postmedial line slightly incurved below vein 4 ..... *quadrata.*

b[1]. Fore wing with black streak between orbicular and reniform, the postmedial line strongly incurved below vein 3.

a[2]. Fore wing with white streaks on the veins and in submedian fold ..... *strigulata.*

b[2]. Fore wing without white streaks on the veins and in submedian fold.

a[3]. Thorax with ochreous dorsal streak..... *thoracica.*

b[3]. Thorax without ochreous dorsal streak.

a[4]. Fore wing with the black streak between orbicular and reniform bent downwards as an oblique striga on inner edge of reniform.

a[5]. Fore wing with the ground-colour white . *lætifica.*

b[5]. Fore wing with the ground-colour purplish grey.

a[6]. Fore wing with the basal black streak extending to beyond antemedial line; size large..... *lobeliæ.*

b[6]. Fore wing with the basal black streak not extending to beyond antemedial line; size smaller.

a[7]. Hind wing with the veins and termen irrorated with brown ..... *manitoba.*

b[7]. Hind wing wholly suffused with brown *furcifera.*

b[4]. Fore wing with the black streak between orbicular and reniform dividing into a fork on inner edge of reniform.

a[5]. Fore wing slightly irrorated with fuscous.

a^6. Fore wing whitish or slightly tinged with brown, the streak in extremity of submedian fold almost always separate from the minute streak intersecting the cilia ..... *psi.*

b^6. Fore wing more or less suffused with purplish brown, the streak in extremity of submedian fold confluent with the streak intersecting the cilia ..... *tridens.*

c^6. Fore wing more uniform purplish brown; size larger ..... *incretata.*

b^5. Fore wing strongly irrorated with fuscous.

a^6. Hind wing with the postmedial line indistinct; size moderate.

a^7. Fore wing with the streak in submedian fold crossing postmedial line strong.

a^8. Fore wing with the orbicular oblique elliptical ..... *cuspis.*

b^8. Fore wing with the orbicular rounded. *leucocuspis.*

b^7. Fore wing with the streak in submedian fold crossing postmedial line slight ..... *orientalis.*

b^6. Hind wing with the postmedial line strong, defined by whitish on outer side; size very large..... *maxima.*

b. Fore wing without black streak in discal fold beyond postmedial line.

a^1. Fore wing without black shade in submedian interspace from base to termen.

a^2. Fore wing with the basal and postmedial streaks in submedian fold strong ..... *iria.*

b^2. Fore wing with the basal and postmedial streaks in submedian fold slight ..... *hercules.*

b^1. Fore wing with black shade in submedian interspace from base to termen ..... *rubiginosa.*

B. Fore wing without black streak between orbicular and reniform.

a. Fore wing with distinct black streak below base of cell.

a^1. Fore wing with spur from lower side of basal streak at middle.

a^2. Fore wing with the streak in submedian fold beyond postmedial line slender and not reaching termen.

a^3. Hind wing white, the veins of terminal half and the termen tinged with brown in female.

a^4. Fore wing blue-white ..... *taurica.*

b^4. Fore wing grey-white..... *aceris.*

b^3. Hind wing wholly suffused with brown.

a^4. Fore wing with the streak below base of cell extending to beyond antemedial line ..... *major.*

b^4. Fore wing with the streak below base of cell not extending to beyond antemedial line ... *eldora.*

b^2. Fore wing with the streak in submedian fold beyond postmedial line strong and reaching termen.

a^3. Hind wing tinged with ochreous.

a^4. Fore wing with the postmedial line angled inwards in submedian fold ..... *tritona.*

b^4. Fore wing with the postmedial line not angled inwards in submedian fold ..... *falcula.*

b^3. Hind wing white, not tinged with ochreous.
a^4. Fore wing with the postmedial line slightly angled outwards at veins 4, 3 ..... *elizabeta.*
b^4. Fore wing with the postmedial line strongly angled outwards at veins 4, 3.
a^5. Fore wing with the ground-colour purplish grey ..... *revellata.*
b^5. Fore wing with the ground-colour blue-grey *grisea.*
b^1. Fore wing without spur from lower side of basal streak at middle.
a^2. Fore wing with the postmedial line minutely waved.
a^3. Fore wing with the inner area black.
a^4. Fore wing with black streak in discal fold beyond postmedial line ..... *alni.*
b^4. Fore wing without black streak in discal fold beyond postmedial line ..... *funeralis.*
b^3. Fore wing with the inner area not black.
a^4. Fore wing with distinct black streak in discal fold beyond postmedial line.
a^5. Fore wing with the postmedial line strongly incurved below vein 4, the medial line indistinct ..... *morula.*
b^5. Fore wing with the postmedial line slightly incurved below vein 4, the medial line distinct .... *transversata.*
b^4. Fore wing without distinct black streak in discal fold beyond postmedial line.
a^5. Fore wing with the antemedial line double, distinct.
a^6. Fore wing with the antemedial line angled inwards in submedian fold; palpi very short ..... *tota.*
b^6. Fore wing with the antemedial line not angled inwards in submedian fold. *radcliffei.*
b^5. Fore wing with the antemedial line single, obsolescent.
a^6. Fore wing with the ground-colour white. *felina.*
b^6. Fore wing with the ground-colour blue-grey.
a^7. Fore wing with the orbicular present. *frigida.*
b^7. Fore wing with the orbicular absent. *cyanescens.*
c^6. Fore wing with the ground-colour ash-grey ..... *pacifica.*
b^2. Fore wing with the postmedial line dentate throughout.
a^3. Fore wing without series of dark streaks in interspaces of terminal area.
a^4. Fore wing with well-defined black streak in discal fold beyond postmedial line.
a^5. Fore wing with oblique black striga on inner edge of reniform ..... *interrupta.*
b^5. Fore wing without oblique black striga on inner edge of reniform ..... *spinigera.*
b^4. Fore wing without well-defined black streak in discal fold beyond postmedial line.
a^5. Fore wing with more or less distinct black streak in submedian fold crossing post-medial line.

a^6. Fore wing with the orbicular well-developed.
a^7. Fore wing with the orbicular round ... *auricoma.*
b^7. Fore wing with the orbicular quadrate, whitish ... *pulverosa.*
b^6. Fore wing with the orbicular minute.
a^7. Fore wing with the antemedial line double, distinct ... *menyanthidis.*
b^7. Fore wing with the antemedial line single, obsolescent.
a^8. Fore wing with the basal streak reaching antemedial line.
a^9. Fore wing blue-grey ... *canadensis.*
b^9. Fore wing grey-white.
a^{10}. Fore wing thickly irrorated with fuscous ... *cinderella.*
b^{10}. Fore wing sparsely irrorated with fuscous.
a^{11}. Fore wing creamy-white, the postmedial line incurved in submedian fold ... *lepusculina.*
b^{11}. Fore wing chalky white, the postmedial line angled inwards in submedian fold ... *chionochroa.*
b^8. Fore wing with the basal streak not reaching antemedial line.
a^9. Fore wing white irrorated with fuscous ... *populi.*
b^9. Fore wing brown irrorated with white ... *similana.*
b^5. Fore wing without black streak in submedian fold crossing postmedial line.
a^6. Fore wing with the postmedial line strongly dentate.
a^7. Hind wing with the ground-colour whitish ... *gastridia.*
b^7. Hind wing with the ground-colour orange ... *metaxantha.*
b^6. Fore wing with the postmedial line minutely dentate.
a^7. Fore wing blue-grey; hind wing white in male.
a^8. Fore wing with prominent white lunule on postmedial line in submedian fold ... *nigricans.*
b^8. Fore wing without prominent white lunule on postmedial line in submedian fold ... *emaculata.*
b^7. Fore wing pale grey; hind wing tinged with brownish ochreous.
a^8. Fore wing with fuscous shade on inner area ... *impressa.*
b^8. Fore wing without fuscous shade on inner area ... *distans.*
b^3. Fore wing with series of dark streaks in interspaces of terminal area.
a^4. Fore wing with the postmedial line with strong whitish teeth interrupted by dark streaks at discal and submedian folds ... *edolata.*

b^4. Fore wing with the postmedial line moderately dentate.
a^5. Fore wing with the postmedial line obsolescent ..... *lithospila.*
b^5. Fore wing with the postmedial line distinct.
a^6. Fore wing with black streak above vein 1 from base to postmedial line ..... *barnesi.*
b^6. Fore wing without black streak above vein 1 from base to postmedial line.
a^7. Fore wing with the inner half suffused with fuscous ..... *perdita.*
b^7. Fore wing with the inner half not suffused with fuscous ..... *extricata.*
c^2. Fore wing with the postmedial line not dentate except at veins 4, 3, then strongly incurved ..... *digna.*
d^2. Fore wing with the postmedial line even throughout, strongly bent inwards below vein 3 ..... *raphaelis.*
b. Fore wing without black streak below base of cell.
a^1. Fore wing with the orbicular moderate.
a^2. Fore wing with the antemedial line strongly bent inwards to inner margin ..... *rubricoma.*
b^2. Fore wing with the antemedial line not strongly bent inwards to inner margin.
a^3. Fore wing with whitish subterminal line.
a^4. Fore wing slightly suffused and irrorated with fuscous ..... *centralis.*
b^4. Fore wing strongly suffused and irrorated with fuscous ..... *megacephala.*
c^4. Fore wing almost wholly suffused with black.
a^5. Head, thorax, and fore wing strongly irrorated with grey ..... *tiena.*
b^5. Head, thorax, and fore wing slightly irrorated with grey ..... *bicolor.*
b^3. Fore wing without whitish subterminal line.
a^4. Fore wing with the postmedial line not defined by small dark lunules on outer side.
a^5. Fore wing ochreous white ..... *betulæ.*
b^5. Fore wing grey ..... *americana.*
b^4. Fore wing with the postmedial line defined by small dark lunules on outer side.
a^5. Fore wing purplish grey suffused with brown.
a^6 Hind wing of male tinged with grey ... *hesperida.*
b^6. Hind wing of male tinged with yellow . *hastulifera.*
c^6. Hind wing of male pure white ..... *dactylina.*
b^5. Fore wing white tinged with brown.
a^6. Fore wing with the antemedial line entire, indistinctly double ..... *insita.*
b^6. Fore wing with the antemedial line reduced to spots on costa, below cell, and on inner margin ..... *innotata.*
b^1. Fore wing with the orbicular minute.
a^2. Fore wing with black streak in submedian fold beyond postmedial line.
a^3. Fore wing with the medial area below and beyond the cell black ..... *othello.*
b^3. Fore wing with the medial area concolorous ... *longa.*
b^2. Fore wing without black streak in submedian fold beyond postmedial line.
a^3. Fore wing with brown shade beyond postmedial line ..... *sperata.*

b^3. Fore wing without brown shade beyond postmedial line.
a^4. Fore wing with the postmedial line dentate . *euphorbiæ*.
b^4. Fore wing with the postmedial line minutely waved ..... *abscondita*.

3679. Acronycta quadrata. (Plate CXXV. fig. 14.)

Acronycta quadrata, Grote, Bull. Buff. Soc. Nat. Sci. ii. p. 154 (1874); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 106, pl. iii. f. 1; Smith, Cat. Noct. N. Am. p. 38.

♂. Head and thorax grey-white mixed with pale violaceous brown; 2nd joint of palpi with black band; tegulæ with blackish streaks at middle and on outer edge; shoulders and outer edges of patagia with black streaks; mid and hind tibiæ with faint dark streaks; abdomen white faintly tinged with brown towards extremity. Fore wing white irrorated with violaceous brown, the costal area from medial to postmedial lines and the postmedial area suffused with pale violaceous brown; subbasal line represented by double black striæ from costa; a strong black streak in submedian fold from base to just beyond antemedial line, expanding at middle and with some brownish suffusion below its base; antemedial line double, brown, waved from costa to submedian fold, then excurved; orbicular white defined by black except above, erect elliptical, with quadrate black mark beyond it extending slightly into the reniform which has a brownish centre and white annulus defined by black; a diffused medial brownish line oblique from costa to lower angle of cell, then incurved; postmedial line black defined by white on inner side, bent outwards below costa, erect to vein 4, then slightly incurved and very minutely waved, a minute black streak before it in submedian fold and strong fascia beyond it to near termen, some whitish points on costa; subterminal line rather diffused, whitish, excurved below costa and at middle and with minute black streak beyond it in discal fold; a terminal series of slight dark striæ; cilia white with dark brown line at base and brown tips; the underside with the costal area irrorated with brown, a black discoidal point and indistinct postmedial line bent outwards below costa, then slightly waved.

♀. Hind wing with indistinct curved postmedial line with broad diffused dark band beyond it except towards tornus; the underside with the costal and terminal areas irrorated with fuscous.

Hab. Canada, Manitoba, Aweme (*Criddle*), 1 ♀, Alberta, Calgary (*Wolley-Dod*), 5 ♂, 1 ♀, Br. Columbia; U.S.A., Nebraska, Kansas, 2 ♀ type, California. *Exp.* 40–44 millim.

3680. Acronycta strigulata. (Plate CXXV. fig. 15.)

Acronycta strigulata, Smith, Ent. News Philad. viii. p. 150 (1897); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 92, pl. xii. f. 6; Dyar, Cat. Lep. N. Am. p. 101.

♂. Head and thorax white mixed with fuscous and black; 2nd

joint of palpi with black band; shoulders with black stripes; vertex of thorax with yellowish stripe; mid and hind tibiæ streaked with black; abdomen white dorsally irrorated with fuscous. Fore wing white irrorated with fuscous and black, the veins white with slight black streaks between them near origin from cell; subbasal and antemedial lines absent; a black streak in basal half of submedian fold, diffused below and defined by a fine white streak above, extending to medial line; orbicular white defined by black except above, oblique, acute at lower extremity and with oblique black streak from it to lower extremity of reniform, which is whitish slightly defined by black on inner side, undefined on outer; a diffused oblique dark bar from middle of costa to reniform and traces of an oblique sinuous line from lower angle of cell to inner margin; postmedial line black slightly defined by white on inner side, strongly bent outwards below costa, then dentate, excurved to vein 4, then very oblique and angled outwards on vein 1, rather diffused black streaks from well before it to termen in discal and submedian folds; a series of small wedge-shaped black marks on termen and cilia, the mark above vein 2 longer. Hind wing pure white; the underside with the costal area irrorated with a few black scales, a black discoidal spot and some points on termen.

♀. Hind wing with the terminal area slightly irrorated with brown.

Hab. U.S.A., Colorado (*Bruce*), 1 ♂, 1 ♀, Glenwood Springs, 1 ♂, 1 ♀. *Exp.* 44 millim.

3681. **Acronycta thoracica.** (Plate CXXV. fig. 16.)

Apatela thoracica, Grote, N. Am. Ent. i. p. 94 (1879); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 91, pl. iii. f. 8; Smith, Cat. Noct. N. Am. p. 37.

♀. Head and thorax white mixed with brown and black; 2nd joint of palpi with black band, frons black at sides and with slight black bar above; antennæ with the basal joint white in front; shoulders and outer edges of patagia with black streaks; prothorax dorsally tinged with reddish ochreous, the metathorax with slight paired black marks; tibiæ streaked with black, the tarsi banded with black; abdomen white irrorated with fuscous and dorsally tinged with brown. Fore wing white suffused with grey and irrorated with black; subbasal line represented by double black striæ from costa and single striga from cell; a strong black streak in submedian fold from base to well beyond antemedial line with a white streak above it extending to medial line; the antemedial line represented by a black striga from costa, interrupted to median nervure, then angled inwards in submedian fold and strongly outwards above inner margin; orbicular white defined by black, small, oblique, triangular, with oblique black streak from its extremity to lower extremity of reniform, which is defined by black on inner side, undefined on outer and with its centre tinged with rufous, an oblique black bar above it from costa, and an indistinct sinuous line from lower angle of cell to inner margin at vein 1; postmedial

line black defined on inner side by diffused white, double just above and below vein 2, strongly bent outwards below costa, then dentate, strongly incurved below vein 4, crossed by black streaks in discal and submedian folds, the latter strong, the former stronger towards termen; the veins of terminal area with slight dark streaks; subterminal line represented by slight white striæ from costa and above vein 2; cilia intersected by short black streaks from before termen. Hind wing white tinged with reddish brown especially on terminal area, the veins brown; cilia white; the underside with the costal area slightly irrorated with black, a blackish discoidal spot, rather maculate postmedial line incurved below vein 3, and terminal series of small lunules.

Hab. U.S.A., Colorado, 1 ♀ type, New Mexico, Las Vigas, Hot Springs, Arizona, Tucson, Yavapai Co., Minnehaha, 1 ♀. *Exp.* 46 millim.

3682. Acronycta lætifica. (Plate CXXV. fig. 17.)

Acronycta lætifica, Smith, Ent. News Philad. viii. p. 150 (1897); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 89, pl. iii. f. 12; Dyar, Cat. Lep. N. Am. p. 101.

Head and thorax white mixed with fuscous; palpi with black band on 2nd joint; shoulders and outer edges of patagia with black streaks; prothorax with slight paired black spots; tibiæ with interrupted black streaks, the tarsi with slight black bands; abdomen white irrorated with fuscous. Fore wing white irrorated with pale brown; subbasal line represented by double dark striæ from costa and single striga from cell; a strong sinuous black streak in submedian fold from base to outer edge of antemedial line, which is double, the lines widely separated towards costa, oblique, sinuous; orbicular defined by black except above, rather oblique elliptical, with strong curved black streak from its lower edge to lower extremity of reniform, which is large, defined by black on inner side, faintly defined on outer and with black points at upper and lower extremities; an indistinct rather diffused medial line, oblique from costa to reniform, oblique and sinuous from lower angle of cell to inner margin; postmedial line double filled in with white, the outer line black, the inner indistinct, bent outwards below costa, then dentate, excurved to vein 4, then strongly incurved, with black streaks from just before it to termen in discal and submedian folds; postmedial area tinged with fuscous and with blackish in submedian interspace, some whitish points on costa; an indistinct diffused white subterminal line slightly bent outwards at vein 7; a terminal series of black points. Hind wing whitish suffused with fuscous, the basal area paler and tinged with ochreous; a terminal series of dark points; the underside white irrorated with fuscous, a blackish spot in middle of cell and black discoidal spot, an indistinct diffused sinuous postmedial line.

Hab. U.S.A., New York, Evans Center (*Grote*), 2 ♂, 2 ♀, New Jersey, Florida, 1 ♂. *Exp.* 44–50 millim.

3683. Acronycta lobeliæ. (Plate CXXV. fig. 18.)

Acronycta lobeliæ, Guen. Noct. i. p. 44 (1852); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 82, pl. ii. f. 11; Smith, Cat. Noct. N. Am. p. 36.
Acronycta grotei, Butl. A. M. N. H. (6) xi. p. 400 (1893).

Head and thorax grey-white mixed with fuscous; palpi with black band on 2nd joint; frons with lateral black marks; shoulders with black streaks; tegulæ and patagia with black streaks at sides; pro- and mesothorax with slight paired black marks; tibiæ with strong black streaks, the tarsi slightly banded with black above; abdomen dorsally suffused with pale reddish brown, the basal crest grey, the anal tuft and ventral surface white mixed with fuscous. Fore wing grey-white suffused and irrorated with fuscous; subbasal line represented by double black striæ from costa and a single striga from cell; a very strong black streak in submedian fold from base to outer side of antemedial line, which is double, oblique, waved, angled outwards below costa and excurved above inner margin; orbicular white defined by black, small, oblique elliptical, a strong curved black streak from its lower edge to lower extremity of reniform, which is large, defined by black on inner side, indistinctly defined on outer and with black points at its upper and lower extremities; an indistinct medial line, oblique from costa to reniform, oblique and sinuous from lower angle of cell to inner margin at antemedial line; postmedial line double filled in with white, the outer line black, bent outwards below costa, then dentate, slightly angled inwards at discal fold and strongly incurved below vein 2, some dark suffusion beyond it in submedian interspace, a black streak from it to near termen in discal fold and a strong black streak from just before it to termen in submedian fold; traces of a minutely waved whitish subterminal line; cilia intersected by black streaks from just before termen. Hind wing white tinged with reddish brown and the terminal area with fuscous, the veins brown; cilia white intersected by slight brown streaks; the underside white, the costal and terminal areas irrorated with fuscous, a slight black streak in base of cell, a black discoidal spot, a crenulate postmedial line ending in a dark spot in submedian fold, and a terminal series of blackish points.

Hab. Canada; U.S.A., New York (*Doubleday*), 1 ♂ type, Evans Center (*Grote*), 3 ♀ type *grotei*, New Jersey, Illinois, Florida, Minnesota, Kansas (*Snow*), 2 ♂, 1 ♀, Douglas Co., Louisiana, Texas. *Exp.* 48–58 millim.

Larva. Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 83, pl. vii. f. 24.

Head black. Body blackish with a broken dorsal red stripe; hairs sparse, fine, short, mostly growing from the tubercles dorsally. Food-plant: Wild Cherry.—H. G. D.

3684. Acronycta manitoba. (Plate CXXV. fig. 19.)

Acronycta manitoba, Smith, Ent. News Philad. viii. p. 150 (1897); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 90, pl. xii. f. 1; Dyar, Cat. Lep. N. Am. p. 101.

♂. Head and thorax grey-white mixed with brown and fuscous; palpi white at base, the 2nd joint with black band; shoulders and outer edges of patagia with black streaks; tibiæ streaked with black, the tarsi banded with black above; abdomen greyish irrorated with fuscous. Fore wing grey-white thickly irrorated with fuscous; subbasal line represented by black striæ from costa and cell; a strong black streak in submedian fold from base to outer edge of antemedial line defined by a fine white streak above; antemedial line double, oblique, waved, angled outwards below costa and bent inwards to inner margin; orbicular rather incompletely defined by black, acute at lower extremity and with strong black streak from it to reniform, which is defined by black on inner side, ill-defined on outer and with black points at upper and lower extremities, its centre tinged with fuscous; a diffused oblique dark striga from costa to reniform and faint sinuous line from lower angle of cell to inner margin at antemedial line; postmedial line black defined by white on inner side, double at costa and below vein 2, bent outwards below costa, oblique to vein 4, then dentate and strongly incurved, with black streak in discal fold from it to near termen, and diffused streak in submedian fold from just before it to termen; an indistinct waved whitish subterminal line, excurved at vein 7, with faint dark streaks from it to the terminal series of small black lunules. Hind wing white, the veins tinged with brown, the terminal area irrorated with brown; the underside with the costal area slightly irrorated with black, a black discoidal lunule, rather diffused postmedial line oblique to vein 4 then incurved, and terminal series of black striæ.

♀. Hind wing more suffused with brown, especially on terminal area.

Hab. Canada, Manitoba, Winnipeg, 1 ♂, Aweme (*Criddle*), 1 ♂, 1 ♀, Cartwright (*Heath*), 2 ♂, 1 ♀; U.S.A., Colorado, Glenwood Springs. *Exp.* 44 millim.

3685. Acronycta furcifera. (Plate CXXV. fig. 20.)

Acronycta furcifera, Guen. Noct. i. p. 44 (1852); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 85, pl. ii. f. 13; Smith, Cat. Noct. N. Am. p. 37.

Head and thorax dark reddish brown mixed with grey; 2nd joint of palpi with black band; shoulders and outer edges of patagia with black streaks; tibiæ streaked with black, the tarsi blackish ringed with white; abdomen reddish brown, the basal crest greyish, the ventral surface whitish irrorated with brown. Fore wing dark reddish brown irrorated with grey-white; subbasal line represented by slight dark marks below costa and cell; a strong

sinuous black streak in subbasal fold from base to outer edge of antemedial line, which is double, oblique, waved, angled outwards below costa and bent inwards to inner margin; orbicular whitish defined by black, oblique, acute at lower extremity and with black streak from it to reniform, which is defined by black on inner side, slightly defined on outer; a diffused dark medial line, oblique from costa to reniform, inwardly oblique and sinuous from lower angle of cell to inner margin at antemedial line; postmedial line double filled in with whitish, the outer line black, bent outwards below costa, then minutely dentate, strongly incurved below vein 4 and angled outwards on vein 1, with slight black streak from it to termen in discal fold and strong streak in submedian fold; an indistinct waved whitish subterminal line, angled outwards at vein 7; the interspaces of terminal area with short black streaks; cilia chequered whitish and brown with fine black line through them. Hind wing whitish suffused with reddish brown; a terminal series of small blackish spots; the underside whitish tinged and irrorated with red-brown, a slight dark streak in base of cell, a blackish discoidal spot and spot on middle of costa, a diffused somewhat maculate postmedial line incurved below vein 4, and terminal series of small black spots.

Hab. Canada; U.S.A., Maine, Kittery Point, New York, 1 ♂, 1 ♀, New Jersey, Union Co., Distr. of Columbia, Washington, Illinois, Carbondale, Florida. *Exp.* 44–46 millim.

Larva. Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 86, pl. vi. f. 10.

Black, the warts, except 1, pale brown with apical hair and minute rosette of reddish hairs, the brownish setæ similar to the rather numerous secondary hairs; a bright red dorsal stripe on somites 3 to 11, narrowly edged with velvety black interrupted at the incisures; somite 12 dorsally black; head bilobed, shining black with a red patch at apex of each lobe, slightly shagreened, the coarse setæ pale: prolegs pale. Food-plants: Wild Cherry, Fire Cherry, and Choke Cherry.

3686. Acronycta psi.

Noctua psi, Linn. Syst. Nat. ed. x. p. 514 (1758); Esp. Schmett. iv. pl. 115. ff. 1–2; Dup. Lép. Fr. vi. p. 218, pl. 87. f. 1; Frr. Neue Beitr. pl. 58; Steph. Ill. Brit. Ent., Haust. iii. p. 39; Caland, Tijd. v. Ent. xxxix. pl. 8. fig. 3; Staud. Cat. Lep. pal. p. 132.
Acronycta bivirgæ, Tutt, Entom. 1888, p 50.
Acronycta suffusa, Tutt, Entom. 1888, p 50.
Acronicta altaica, Staud. Cat. Lep. pal. p. 132 (1901).

♂. Head and thorax white tinged with pale brown; palpi with black band on 2nd joint; antennæ with the basal joint black behind; shoulders and outer edges of patagia with black streaks; tibiæ streaked with black; abdomen white dorsally irrorated with fuscous, ventrally tinged with pale brown. Fore wing white thickly irrorated with pale brown; subbasal line represented by double black striæ from costa; a black streak in submedian fold from base to just beyond

antemedial line giving off slight spurs on upper side near base and on underside at middle and forking above and below on antemedial line, which is double, oblique, waved, bent inwards to inner margin, indistinct except at costa; orbicular and reniform defined by black, the former oblique elliptical, rather acute at lower extremity and with curved black streak from it extending into reniform, which is produced at upper and lower extremities and constricted at middle; an oblique medial blackish striga from costa; postmedial line black

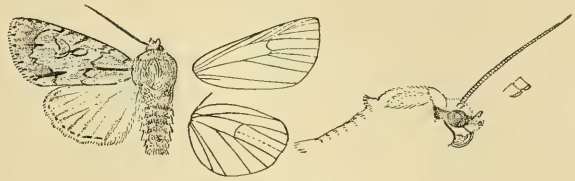


Fig. 18.—*Acronycta psi*, ♂. ½.

defined by white on inner side, double at costa, bent outwards below costa, then recurved and slightly sinuous, angled outwards at veins 4, 3, then incurved and excurved at vein 1, crossed by a fine black streak in discal fold and stronger streak in submedian fold from well before it to near termen, the area beyond it slightly tinged with brown, some whitish points with black points between them on costa; subterminal line absent; a terminal series of black points with slight black streaks from them intersecting the cilia and double point at submedian fold. Hind wing white, the veins of terminal half tinged with brown, the terminal area irrorated with brown from apex to vein 2; a terminal series of dark points; the underside with the costal area slightly irrorated with black, a black discoidal spot and traces of a waved postmedial line with blackish spot on costa and minute dark streaks on the veins.

♀. Hind wing with indistinct sinuous postmedial line, the terminal area suffused with brown.

Ab. 1. *bivirgæ*. Fore wing with the basal area to antemedial line and the postmedial area suffused with black.

Ab. 2. *suffusa*. Darker; fore wing more irrorated with brown.

Ab. 3. *altaica*. Much paler; fore wing white, tinged with fuscous grey.—Altai, E. Siberia.

Hab. Britain, Leech Coll.; France, Sand Coll.; Germany, Zeller, Frey, and Leech Colls.; Austria; Hungary; Switzerland, Frey Coll.; Spain; Italy, Leech Coll.; Algeria; Scandinavia; Russia, St. Petersburg, Zeller Coll.; Bulgaria; Armenia; Asia Minor, Pontus; Syria, Mardin; W. Turkestan, Ferghana; W. Siberia, Altai; E. Siberia, Amurland, Ussuri; Japan, Yokohama (*Manley*), 1 ♂. *Exp.* 36–50 millim.

Larva. Meyr. Brit. Lep. p. 141; Barrett, Lep. Brit. iii. p. 251, pl. 122. f. 2.

Blackish or slate-grey; a broad pale yellowish or whitish dorsal stripe; lateral series of orange or reddish marks; spiracular line

whitish, broad; 4th somite with a long erect dorsal blackish prominence, the 11th somite with smaller prominence; numerous ochreous, whitish and blackish hairs; head black. Food-plants: Plum, Rose, Birch, &c. 7–9.

3687. Acronycta tridens.

Noctua tridens, Schiff. Wien. Verz. p. 67 (1776); Esp. Schmett. iv. pl. 115. ff. 5–8; Dup. Lép. Fr. vi. p. 222, pl. 87. f. 2; Steph. Ill. Brit. Ent., Haust. iii. p. 40; Caland, Tijd. v. Ent. xxxix. pl. 8. f. 2; Staud. Cat. Lep. pal. p. 132.
Noctua psi, Hübn. Eur. Schmett., Noct. f. 5 (nec Linn.).
Acronycta kargalika, Moore, A. M. N. H. (5) i. p. 232 (1878); id. 2nd Yarkand Mission, Lep. p. 8, pl. 1. f. 9.
Acronycta virga, Tutt, Entom. 1888, p. 50.

♂. Head and thorax grey suffused with purplish brown; 2nd joint of palpi with black band; frons black at sides; antennæ with the basal joint black behind; shoulders and outer edges of patagia with black stripes; tibiæ striped with black, the tarsi banded with black; abdomen whitish dorsally suffused with brown and irrorated with black. Fore wing grey suffused with purplish brown; subbasal line represented by double black striæ from costa; a black streak in submedian fold from base to outer edge of antemedial line giving off slight spurs above near base and below at middle; antemedial line double, oblique, waved, obsolescent on inner area; orbicular defined by black on outer side and below, oblique elliptical and giving off an oblique black streak extending into the reniform, which is defined by black on inner side, ill-defined on outer; an oblique black striga from middle of costa; postmedial line black, defined by pale brown on inner side, double at costa, bent outwards below costa, then waved, angled outwards at veins 4, 3, then incurved and excurved at vein 1, crossed by black streaks in discal and submedian folds from well before it to near termen, the latter confluent with a terminal point; faint traces of a pale waved subterminal line; a terminal series of black points emitting slight streaks intersecting the cilia, which are brownish at base, whitish at tips. Hind wing whitish, suffused with pale brown especially on terminal area; the underside white irrorated with brown, a black discoidal spot, waved postmedial line excurved to vein 4, then oblique, and terminal series of small black spots.

♀. Hind wing with indistinct sinuous postmedial line, the terminal area more suffused with brown.

Ab. 1. Fore wing more variegated with white; hind wing of male white, the veins slightly tinged with brown towards termen. —Britain.

Ab. 2. *virga*. Fore wing with the terminal area broadly suffused with fuscous.—Britain.

Hab. Britain, Leech Coll.; France, Leech Coll.; Germany, Zeller, Frey and Leech Colls.; Austria; Hungary; Switzerland;

Spain, Catalonia; N. Italy; Algeria; Scandinavia; S. Russia; Bulgaria; Armenia; E. Turkestan, Karghalik; Syria; E. Siberia, Amurland, Ussuri. *Exp.* 40–46 millim.

Larva. Meyr. Brit. Lep. p. 141; Barrett, Lep. Brit. iii. p. 247, pl. 122. f. 1.

Black; a broad white dorsal stripe including a series of orange spots; lateral series of reddish marks and white tubercles; spiracular line broad, whitish; somites 4 and 11 with dorsal prominences, the 4th with tuft of black hair; numerous long blackish, whitish, and yellowish hairs; head black. Food-plants: Hawthorn, Oak, Birch, &c. 8–10.

3688. **Acronycta incretata**, n. n.

Acronycta increta, Butl. A. M. N. H. (5) i. p. 78 (1878); id. Ill. Het. B. M. iii. p. 12, pl. 44. f. 5 (1879), nec Morr. 1874; Staud. Cat. Lep. pal. p. 132.

♂. Head and thorax greyish suffused with purplish brown; 2nd joint of palpi with black band; frons black at sides; antennæ with the basal joint black behind; shoulders and outer edges of patagia with black stripes; tibiæ with black stripes; abdomen greyish dorsally suffused with brown. Fore wing greyish suffused with purplish brown; subbasal line represented by double black striæ from costa; a black streak in submedian fold from base to just beyond antemedial line, giving off slight spurs above near base and below at middle and forking above and below on antemedial line, which is double, indistinct, oblique, waved; orbicular and reniform defined by black, the former open above, oblique elliptical, with curved black streak from it extending into the reniform, which is constricted at middle and produced at upper and lower extremities; an oblique black striga from middle of costa to reniform; postmedial line black defined by pale brown on inner side, double at costa, bent outwards below costa, then waved, angled outwards at veins 4, 3, then incurved and excurved at vein 1, crossed by a fine streak in discal fold and stronger streak in submedian fold from well before it to termen, some slight pale marks beyond it on costa; a series of slight black streaks from just before termen intersecting the cilia. Hind wing white, the veins and terminal area tinged with brown; a terminal series of slight dark points; the underside white, the costal area tinged and irrorated with brown, a black discoidal spot, waved postmedial line with blackish spot on costa, excurved to vein 4, then oblique, a terminal series of small dark lunules.

♀. Hind wing wholly suffused with brown, an indistinct sinuous postmedial line.

Hab. Japan, Yokohama (*Jonas*, *Pryer*), 2 ♂, 4 ♀ type; Corea, Gensan (*Leech*), 1 ♂; W. China, Wa-ssu-kow, 1 ♀. *Exp.* 45–54 millim.

3689. Acronycta cuspis.

Acronycta cuspis, Hübn. Noct. f. 504 (1818); Treit. Eur. Schmett. v. 1, p. 32 (1825); Dup. Lép. Fr., Suppl. iii. p. 150, pl. 15. f. 1; Frr. Neue Beitr. i. pl. 57; Boisd. Icones, pl. 71. f. 3; Caland, Tijd. v. Ent. xxxix. p. 163, pl. 8. f. 4; Staud. Cat. Lep. pal. p. 132.

♂. Head and thorax white mixed with fuscous; 2nd joint of palpi with black band; frons black at sides; antennæ with the basal joint black behind; shoulders and outer edges of patagia with black streaks; patagia with black medial streaks; tibiæ streaked with black, the tarsi slightly ringed with black; abdomen white irrorated with black and dorsally tinged with brown at base. Fore wing bluish white irrorated with fuscous; subbasal line represented by double black striæ from costa; a strong black streak in submedian fold from base to antemedial line, the basal half thicker; antemedial line double, oblique, waved, bent inwards to inner margin; orbicular defined by black, rather oblique elliptical, connected by a short black streak with the reniform, which is defined by black on inner side, ill-defined on outer; an irregular oblique black bar from costa to reniform and slight oblique sinuous line from lower angle of cell to inner margin at antemedial line; postmedial line black defined by white on inner side, double at costa, bent outwards below costa, then minutely waved, excurved to vein 4, then incurved, crossed by slight black streak in discal fold and strong streak in submedian fold, the latter extending to near termen, the area beyond it very slightly darker to the hardly traceable waved whitish subterminal line; a terminal series of black points with strong black streaks from them intersecting the white cilia. Hind wing white slightly tinged with brown at base, traces of a curved postmedial line; a diffused brownish subterminal band; a terminal series of dark points with slight streaks from them intersecting the cilia; the underside white, the costal area irrorated with a few dark scales, a dark discoidal spot, a postmedial line waved and excurved to vein 5, then oblique, and terminal series of small dark lunules.

♀. Hind wing more suffused with brown.

Ab. 1. Fore wing without the bluish tinge, suffused with pale brown.

Ab. 2. Fore wing almost wholly suffused with black-brown.

Hab. France; Germany, Zeller, Frey, and Leech Colls.; Austria, Leech Coll.; Hungary; Switzerland; Armenia; W. Turkestan, Issyk Kul; E. Turkestan, Ili; E. Siberia, Amurland, Ussuri. *Exp.* 40–45 millim.

Larva. Kirby, Butt. & Moths Eur. p. 158; Hffm. Raup. p. 75, pl. 21. f. 28.

Resembles that of *A. psi*, but has a long thick tuft of black hair on 4th somite instead of the tubercle. Food-plant: Alder. 8–9.

3690. Acronycta leucocuspis.

Acronycta leucocuspis, Butl. A. M. N. H. (5) i. p. 78 (1878); id. Ill. Het. B. M. iii. p. 12, pl. 44. f. 2.

Head and thorax white mixed with fuscous; 2nd joint of palpi with black band; frons black at sides; antennæ with the basal joint black behind at extremity; shoulders and outer edges of patagia with black stripes; tegulæ with black medial stripes; tibiæ with black streaks, the tarsi banded black and white; abdomen greyish tinged with brown and irrorated with black. Fore wing grey-white thickly irrorated with brown; subbasal line represented by double black striæ from costa; a black streak in submedian fold from base to antemedial line, giving off slight spurs above near base and below at middle and forking above and below at antemedial line, which is double, oblique, irregularly waved, the lines rather widely separated towards costa; orbicular white defined by black, small, round, with black streak from it to reniform, which has a brown centre and whitish annulus defined by black on inner side, ill-defined on outer, produced at upper and lower extremities; an oblique diffused blackish bar from costa to reniform and indistinct oblique sinuous line from lower angle of cell to inner margin at antemedial line; postmedial line black defined by white on inner side, double at costa, bent outwards below costa, then minutely waved, slightly angled outwards at veins 4, 3, then incurved, crossed by a slight black streak in discal fold from well before it to subterminal line and a stronger streak in submedian fold extending to termen, some white points beyond it on costa; the terminal area with slight dark streaks on the veins; subterminal line represented by a series of whitish lunules diffused towards termen; a terminal series of small black spots; cilia brown and white at base, white at tips and with slight dark line through them. Hind wing white, the veins brown; an indistinct sinuous postmedial line; the terminal area suffused with brown from apex to vein 2; a terminal series of slight dark striæ; cilia mixed with brown at base; the underside with the costal area irrorated with black, a slight dark streak in cell, black discoidal spot, traces of a waved postmedial line and terminal series of small blackish lunules.

Ab. 1. ♀. Head, thorax, and fore wing browner; hind wing wholly suffused with brown.

Hab. Japan, Oiwake (*Pryer*), 1 ♂, Yokohama (*Jonas*, *Pryer*), 3 ♂ type, Fushiki (*Leech*), 1 ♀; Corea, Gensan (*Leech*), 2 ♂, 1 ♀; N. China, 1 ♀. *Exp.* 40–46 millim.

3691. Acronycta orientalis.

Acronycta orientalis, Mann, Wien. ent. Mon. 1862, p. 370, pl. 3. f. 4; Staud. Cat. Lep. pal. p. 132.

♂. Head and thorax white mixed with black-brown; palpi

with the 2nd joint mostly black; frons with blackish bar; tarsi banded with black; abdomen grey irrorated with fuscous and dorsally tinged with brown. Fore wing white thickly irrorated with black and tinged in parts with brown; subbasal line represented by slight black striæ from costa and cell; a rather diffused black streak in submedian fold from base to just beyond the antemedial line giving off a slight spur below at middle; antemedial line rather diffused and ill-defined, double, the two parts widely separated at costa, oblique, waved; orbicular whitish defined by black and with slight dark centre, rather small, round with black streak from it to middle of reniform, which is incompletely defined by black and with some black on inner side of centre; an oblique black bar from costa to reniform and indistinct oblique line from lower angle of cell to inner margin; postmedial line double filled in with whitish, the inner line indistinct except below vein 3, bent outwards below costa, then dentate, excurved to vein 4, then incurved and angled outwards at vein 1, some black points beyond it on costa, crossed by slight black streaks in discal and submedian folds from just before it to subterminal line and with slight brown suffusion beyond it especially in submedian interspace; subterminal line represented by a series of slight diffused whitish lunules; a terminal series of small triangular black spots with slight dark streaks from them intersecting the cilia, which have a slight brown line through them. Hind wing white, the veins of terminal area with slight dark streaks; a terminal series of blackish points with slight dark streaks from them intersecting the cilia; the underside with the costal area slightly irrorated with brown, a slight blackish discoidal spot.

Hab. Asia Minor, 1 ♂, Pontus, Bithynia, Lydia. *Exp.* 40 millim.

Larva. Led. Ann. Soc. Ent. Belge, ix. p. 63, pl. 3. f. 7.

Pearl-grey with black dorsal fascia and subdorsal white stripes; hairs long, grey-white. Food-plant: Pear. 5.

3692. **Acronycta maxima.** (Plate CXXV. fig. 21.)

Triæna maxima, Moore, P. Z. S. 1881, p. 333; Hmpsn. Moths Ind. ii. p. 240.

Head and thorax grey mixed with dark iron-brown; 2nd joint of palpi blackish at tips; frons black at sides; basal joint of antennæ black behind; tegulæ dark brown at base; shoulders with black stripes with white streaks above them; outer edges of patagia and base of upper edges with black streaks; tibiæ with slight black streaks, the tarsi black ringed with white; abdomen dorsally silky brown, ventrally whitish. Fore wing grey suffused and irrorated with iron-brown; subbasal line represented by diffused double dark striæ from costa; a sinuous black streak in submedian fold from base to just beyond antemedial line, giving off slight spurs below at middle, above at inner antemedial line and above and

below near extremity: antemedial line double, dark, rather diffused, the two lines widely separated on costal half, oblique, waved, bent inwards to inner margin, the outer line angled outwards below costa and just below median nervure; orbicular whitish defined by black, more distinctly on outer side, small, somewhat elongate elliptical; reniform large, defined by black, with black lunule on inner edge of centre with diffused brown mark beyond it; a diffused oblique brown striga from costa to reniform and traces of an oblique sinuous line from lower angle of cell to inner margin at antemedial line; postmedial line double filled in with white, bent outwards below costa, then dentate, excurved to vein 4, then incurved, crossed by a short black streak in discal fold from just before it and a longer streak in submedian fold from well before it, some brown suffusion beyond it and some white points on costa; subterminal line absent; a series of small black spots on termen and base of cilia, which are white, and double spot at submedian fold. Hind wing whitish suffused with reddish brown, the terminal area darker; a diffused brown postmedial line excurved to vein 4, then incurved and defined by whitish on outer side; a series of small blackish spots on termen and base of cilia which are white; the underside white slightly irrorated with brown, a large black discoidal spot, crenulate postmedial line excurved to vein 4, then oblique, traces of a diffused subterminal band and terminal series of points.

Hab. Punjab, Murree (*Powell, Harford*), 2 ♂, 3 ♀, type; Assam, Khásis; Burma, Rangoon. *Exp.* ♂ 64, ♀ 72 millim.

3693. **Acronycta iria.** (Plate CXXV. fig. 22.)

Acronycta iria, Swinh. A. M. N. H. (7) iii. p. 113 (1899).

♂. Head and thorax grey suffused with pale red-brown; palpi white, the 2nd joint with black band; antennæ with the basal joint black behind at tips; shoulders with black streaks; tibiæ streaked with black; abdomen whitish dorsally tinged with brown. Fore wing whitish suffused and irrorated with pale red-brown; subbasal line represented by double oblique dark striæ from costa; a sinuous black streak in submedian fold from base to antemedial line where it forks, giving off a slight spur below at middle; antemedial line indistinct, double, the lines very widely separated on costal half, oblique, waved, angled inwards on vein 1 and excurved above inner margin, the outer line angled outwards below costa; orbicular and reniform defined by fuscous, the former whitish with slight rufous centre, rather oblique elliptical, with a black streak from it extending into the reniform which has a rufous centre; a diffused oblique fuscous line from costa to reniform and traces of an oblique sinuous line from lower angle of cell to inner margin at antemedial line; postmedial line double, black filled in with white, the inner line incomplete, bent outwards below costa, then

dentate, strongly incurved below vein 4, crossed by a black streak in submedian fold from well before it to termen towards which it expands, some whitish points beyond it on costa; the veins of terminal area with slight dark streaks; faint traces of a minutely waved whitish subterminal line with slight dark streaks in the interspaces from it to the series of small black spots on termen and base of cilia, which are white with a slight black line through them. Hind wing white, the veins tinged with brown, the terminal area slightly suffused with brown from apex to submedian fold and with a terminal series of slight dark lunules; the underside with the costal area slightly irrorated with brown, a black discoidal spot, faint traces of postmedial line with blackish spot in submedian fold, and terminal series of slight dark lunules.

♀. Hind wing with indistinct sinuous postmedial line and the terminal area more suffused with fuscous.

Hab. Punjab, Kulu, Sultanpur (*G. Young*), 2 ♂, 1 ♀ type. *Exp.* 50–54 millim.

3694. Acronycta hercules.

Acronycta hercules, Feld. Reis. Nov. pl. 109. f. 2 (1874); Staud. Cat. Lep. pal. p. 131.
Acronycta elongata, Oberth. Ét. Ent. x. p. 20, pl. 2. f. 3 (1884).

♂. Head and thorax grey mixed with fuscous brown; 2nd joint of palpi and frons with black patches at sides; shoulders with black spots; tegulæ dark at tips; patagia with dark upper edges; pectus tinged with rufous at sides, the tibiæ with blackish streaks; abdomen grey-white irrorated with fuscous and tinged with ochreous at base and on ventral surface. Fore wing grey-white thickly irrorated with fuscous brown; subbasal line represented by double oblique striæ from costa; a slight dark streak below base of cell; antemedial line double, oblique, dentate, the lines widely separated, the outer line angled outwards below costa, the inner line inwards below cell, angled inwards on vein 1 and bent inwards to inner margin; orbicular and reniform large, incompletely defined by fuscous, the former rounded and with short black streak from it to the latter which has its centre tinged with rufous; an indistinct irregular medial line, oblique from costa to lower angle of cell, angled inwards in submedian fold and bent outwards to inner margin; postmedial line double filled in with whitish, strongly bent outwards below costa, then strongly dentate, excurved to vein 4, then incurved, with dentate black mark before it in submedian fold and whitish points with black streaks between them beyond it on costa; subterminal line represented by a series of faint whitish lunules in the interspaces; a series of black points on termen and base of cilia. Hind wing white, the basal area suffused with reddish brown, the veins brown; some brown suffusion on terminal area from apex to below vein 2; a series of fuscous points on termen and base of cilia from apex to vein 2; the underside white, the basal area faintly tinged with ochreous, the

costal and inner areas with slight dark irroration, a black discoidal lunule, small postmedial spots on costa and in submedian fold, and terminal series of points.

♀. Hind wing more suffused with brown.

Hab. E. Siberia, Amurland, 1 ♀, Ussuri; Japan, Tokio (*Maries*), 2 ♂, Oiwake (*Pryer*), 1 ♂, Yokohama (*Jonas*, *Pryer*), 4 ♂, 2 ♀; China, Foo-chow (*de la Touche*), 1 ♀. *Exp.* 60–66 millim.

3695. Acronycta rubiginosa.

Acronycta rubiginosa, Wlk. Journ. Linn. Soc., Zool. vi. p. 178 (1862); Swinh. Cat. Het. Mus. Oxon. ii. p. 30.

Triæna denticulata, Moore, P. Z. S. 1888, p. 408; Butl. Ill. Het. B. M. vii. p. 45, pl. 125. f. 8: Hmpsn. Moths Ind. ii. p. 242.

Head and thorax grey mixed with brown and black; palpi with black spot on 2nd joint near extremity; frons with lateral black bars; patagia with black streaks on outer edge; tarsi banded with black; abdomen whitish suffused and irrorated with brown. Fore wing grey almost wholly suffused with brown and irrorated with black, the terminal area paler; a diffused black fascia in submedian fold from base to termen; subbasal line represented by double oblique black striæ from costa and single striga from cell; antemedial line hardly traceable, double, oblique, waved, with double blackish points on costa, vein 1 and inner margin; orbicular and reniform incompletely defined by black, the former whitish, oblique elliptical, the latter very indistinctly defined; a very oblique medial dark shade from costa to lower angle of cell; postmedial line double filled in with whitish in parts, bent outwards below costa, then dentate, incurved below vein 3 and angled outwards on vein 1; some whitish points with slight blackish marks between them beyond it on costa and a brown shade from it to termen at middle; small dentate subterminal blackish marks in the interspaces from below costa to vein 4; a terminal series of small triangular black spots with dark streaks from them intersecting the cilia. Hind wing white; the veins tinged with brown; a series of small blackish terminal spots with blackish marks beyond them on the cilia, which are mixed with brown; the underside with the costal area slightly irrorated with brown, a brownish patch on middle of costa, slight discoidal spot and traces of a postmedial line with blackish spot on costa, waved to vein 4, then oblique.

Hab. Kashmir, Scinde Valley (*Leech*), 1 ♀; Punjab, Simla (*Harford*), 1 ♂, Dharmsála (*Hocking*), 2 ♂, 2 ♀ type *denticulata*; Borneo, Sarawak (*Wallace*), type † in Mus. Oxon. *Exp.* 42–44 millim.

3696. Acronycta taurica. (Plate CXXV. fig. 23.)

Acronicta taurica, Staud. Cat. Lep. pal. 132 (1901).

♀. Head and thorax grey-white mixed with fuscous brown; 2nd joint of palpi with black band; frons black at sides: antennæ

with the basal joint black behind ; shoulders and outer edges of patagia streaked with black ; tibiæ slightly streaked with black, the tarsi banded with black ; abdomen grey dorsally suffused with brown, the basal crest mixed with black. Fore wing blue-grey thickly irrorated with black-brown ; subbasal line represented by double black striæ from costa ; a sinuous black streak in submedian fold from base to beyond antemedial line emitting a slight spur on lower side at middle and spurs above and below at the antemedial line, which is double, oblique, waved, bent inwards to inner margin ; orbicular and reniform defined by black, well separated, the former round, the latter with oblique black striga in lower part and the black on outer edge broken up into points ; an oblique black bar from costa to reniform ; postmedial line double filled in with white, the inner line indistinct, bent outwards below costa, then dentate, excurved to vein 4, then incurved, crossed by black streaks in discal and submedian folds from well before it to before termen with slight fuscous suffusion beyond it and some white points with black striæ between them on costa ; a terminal series of black points with fuscous streaks from them intersecting the cilia, which are white with a slight dark line near base. Hind wing white tinged with brown, the veins brown, the terminal area suffused with brown ; a curved postmedial line with minute dark streaks on the veins ; a terminal series of black points with slight dark streaks from them intersecting the cilia, which are white ; the underside white, the costal area irrorated with black, a small black discoidal spot, curved postmedial series of minute black streaks on the veins, and terminal series of black points.

Hab. Asia Minor, Taurus Mts., Hadjin, Zeitun ; Syria, Lebanon, 1 ♀, Leech Coll. *Exp.* 56 millim.

3697. Acronycta aceris.

Noctua aceris, Linn. Syst. Nat. ed. x. p. 514 (1758) ; Esp. Schmett. iv. pl. 114. ff. 4–7 & pl. 117 A. ff. 3, 4 ; Donov. Nat. Hist. Eng., Ins. x. p. 15. pl. 330 ; Hübn. Eur. Schmett., Noct. ff. 13, 14 ; Dup. Lép. Fr. vi. p. 253, pl. 88. f. 5 ; Steph. Ill. Brit. Ent., Haust. iii. p. 36 ; Staud. Cat. Lep. pal. p. 131.
Noctua candelisqua, Esp. Schmett. iv. pl. 191. f. 1 (1796).
Noctua infuscata, Haw. Lep. Brit. p. 177 (1809).
Acronycta paradoxa, Boisd. Ind. Meth. p. 60 (1829).
Acronicta judæa, Staud. Cat. Lep. pal. p. 131 (1901).

♂. Head and thorax white mixed with black-brown ; 2nd joint of palpi with black band ; shoulders with black streaks ; tibiæ streaked with black, the tarsi banded with black ; abdomen grey-white slightly irrorated with fuscous. Fore wing grey-white irrorated with fuscous brown ; subbasal line represented by double black striæ from costa ; a sinuous black streak in submedian fold from base to antemedial line giving off slight spurs below at middle and above and below at antemedial line, which is double, oblique, waved, angled outwards below costa and inwards on the veins and to inner

margin; orbicular and reniform defined by black, the former small, oblique elliptical, the latter with oblique black striga in centre; a diffused oblique blackish bar from costa to reniform and a slight line from lower angle of cell, incurved to vein 1 where it is angled outwards, then inwards above inner margin; postmedial line double filled in with whitish, bent outwards below costa, then dentate, excurved to vein 3, then incurved and angled outwards on vein 1, crossed by a slight black streak in submedian fold from medial to subterminal line, the veins beyond it with slight dark streaks, some white points on costa; a series of small black spots on termen and base of cilia, which have a slight dark line through them. Hind wing pure white, with postmedial series of minute dark streaks on the veins and fine terminal line; the underside with the costal area slightly irrorated with brown, a small blackish discoidal spot, curved postmedial series of minute black streaks on the veins, and terminal series of striæ.

♀. Hind wing with the veins strongly streaked with black.

Ab. 1. *candelisqua*. Head, thorax, and fore wing suffused with brown; abdomen and terminal area of hind wing tinged with brown.

Ab. 2. *judæa*. Paler; fore wing greyish white.—Palestine.

Hab. Britain, Leech Coll.; France, Sand Coll.; Germany, Zeller and Leech Colls.; Austria; Hungary; Switzerland, Frey Coll.; Spain; Italy; Greece; Norway, Frey Coll.; Russia, Lithonia, Zeller Coll.; Armenia; Asia Minor, Pontus, Bithynia; Palestine; W. Turkestan, Turcomania, Issyk Kul; E. Turkestan, Ili, Kashgar. *Exp.* 40–48 millim.

Larva. Meyr, Brit. Lep. p. 142; Barrett, Lep. Brit. iii. p. 231. pl. 120. f. 2.

Yellow clothed with long yellow hair, the 4th, 6th, 7th, and 8th somites with dorsal tufts of red hair; a dorsal series of black-edged white diamond-shaped marks; warts brown; stigmata black; head yellow marked with black. Food-plants: Horse-chestnut, Sycamore, Oak, &c. 7–9.

3698. Acronycta major.

Acronycta major, Brem. Lep. Ost-Sib. p. 48, pl. 5. f. 7 (1868); Oberth. Ét. Ent. v. p. 69. pl. 7. f. 5; Staud. Cat. Lep. pal. p. 131.
Triæna anædina, Butl. Trans. Ent. Soc. 1881, p. 19.

Head and thorax grey-white slightly mixed with brown; 2nd joint of palpi with black band; frons black at sides; basal joint of antennæ black behind; shoulders and outer edges of patagia with black stripes; tibiæ streaked with black; abdomen grey-white, the extremity irrorated with fuscous, the ventral surface white. Fore wing grey-white thickly irrorated with pale brown; subbasal line represented by an oblique black striga from costa; a sinuous black streak in submedian fold from base to outer antemedial line, giving off slight spurs above and below at antemedial line, the line very indistinct, double, oblique, waved, the two lines

widely separated towards costa and with black striæ at costa; orbicular whitish defined on inner and outer sides by a few black scales, small, rather oblique elliptical; reniform with black striga on inner edge with minute oblique black streak from it, otherwise hardly traceable; an indistinct diffused oblique dark striga from costa to reniform; postmedial line blackish defined by white on inner side, double at costa, just below discal fold and above submedian fold, bent outwards below costa, angled outwards at vein 7, then minutely dentate, excurved to vein 3, then incurved and angled outwards on vein 1, crossed by black streaks at discal and submedian folds not nearly reaching termen and with white points beyond it on costa; a series of small black spots on termen and base of cilia, which are white. Hind wing white, the basal area clothed with pale reddish-brown hair, the veins streaked with brown and the terminal area suffused with brown; a brownish postmedial line, excurved to vein 4 then incurved; cilia white; the underside white, the veins tinged with brown, a black discoidal spot, indistinct crenulate postmedial line with brownish spot at costa, excurved to vein 4, then oblique, and terminal series of slight dark points.—E. Siberia; Japan, Yezo.

Ab. 1. *anœdina*. Somewhat darker especially the hind wing.—Japan, Hondo; W. China.

Ab. 2. Fore wing with the basal and postmedial black streaks more or less obsolescent.—C. & W. China.

Hab. E, Siberia, Amurland, Ussuri; Japan, Yezo, Hakodaté (*Andrews*), 1 ♂, Tokio (*Maries*), 1 ♀ type *anœdina*, Yokohama (*Manley, Pryer*), 2 ♂; C. China, Hai-ning (*J. J. Walker*), 1 ♀, Ichang (*Hobson*), 4 ♂; W. China, Chang-yang (*Pratt*), 1 ♂, 1 ♀, Omeishan, 1 ♀, Chia-kou-ho (*Pratt*), 1 ♂, Ta-chien-lu (*Pratt*), 1 ♂. *Exp.* 52–72 millim.

3699. **Acronycta eldora.** (Plate CXXV. fig. 24.)

Acronycta eldora, Smith, J. N.Y. Ent. Soc. xiii. p. 189 (1905).

♀. Head and thorax grey-white mixed with fuscous brown and blackish; sides of palpi and frons with blackish patches; shoulders with black streaks; tegulæ with dark tips towards middle and patagia with dark upper edges; abdomen grey-white mixed with dark brown and black. Fore wing grey-white suffused and irrorated with brown; a small black spot at base and traces of a black streak in submedian fold; subbasal line represented by an oblique black striga from costa; antemedial line rather indistinct, double, oblique, angled outwards below costa and just below median nervure and strongly above inner margin, angled inwards in submedian fold and on vein 1; orbicular and reniform defined by blackish, the former small, irregularly rounded, the latter with blackish centre, an oblique dark shade above it from costa and traces of an oblique sinuous line from lower angle of cell to inner margin; postmedial line double filled in with white, the outer line black, bent outwards

below costa, then strongly dentate, excurved to vein 4, then incurved; crossed by a strong black streak in submedian fold extending to termen and with a slight streak before and beyond it in discal fold not extending to termen, some slight whitish streaks beyond it on costa; the veins of terminal area with slight dark streaks; subterminal line absent; a series of blackish points on termen and cilia. Hind wing greyish, suffused with fuscous, the veins darker; the underside white slightly irrorated with brown, the veins brownish, a blackish discoidal spot and curved minutely waved postmedial line.

Hab. U.S.A., Colorado, Denver, 2 ♀, cotype. *Exp.* 62–64 millim.

3700. Acronycta tritona. (Plate CXXV. fig. 25.)

Triæna tritona, Hübn. Zütr. p. 21, ff. 107, 108 (1818); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 104, pl. ii. f. 9; Smith, Cat. Noct. N. Am. p. 37.

Head and thorax violaceous grey tinged with brown; palpi white at base and with black band on 2nd joint; antennæ with the basal joint white in front, black behind; tibiæ streaked with black; abdomen whitish, dorsally suffused with reddish brown. Fore wing violaceous grey tinged with reddish brown; subbasal line represented by a slight dark striga from costa; a sinuous black streak in submedian fold from base to just beyond the antemedial line giving off slight spurs below at middle and above at inner antemedial line; the line very indistinctly double, oblique, sinuous, almost obsolete on inner area; orbicular incompletely defined by blackish, small, round; reniform defined by a blackish lunule on inner side, very indistinct on outer, constricted at middle and with its upper extremity produced; a very oblique diffused dark bar from costa to reniform; postmedial line black defined by grey on inner side, bent outwards below costa, then minutely waved, slightly angled inwards in discal fold and outwards on veins 4, 3, strongly angled inwards in submedian fold, then excurved again, a strong black streak from it to termen in submedian fold; subterminal line absent; the interspaces of terminal area with very slight dark streaks; a series of small blackish spots on termen and cilia. Hind wing whitish tinged with ochreous brown, the termen rather darker; cilia with a fine whitish line at base; the underside white, the costal area slightly tinged with ochreous.

Hab. Canada; U.S.A., New York, Center (*Bailey*), 2 ♂, 2 ♀, Albany (*Bailey*), 1 ♀, Mississippi, Florida (*Doubleday*), 1 ♀, Minnesota, Oregon, Portland, Colorado, Pacific Coast. *Exp.* 40 millim.

Larva. Smith & Dyar, Pr. U. S. Nat. Mus. xxi. p. 105.

Head brown, dotted with black. Body green; a brown dorsal band, divided on joint 3, broken on joint 6, enclosing a green space on joints 7 to 10; hairs short, fine, sparse, several from each tubercle. Food-plant: *Vaccinium*.—H. G. D.

3701. Acronycta falcula. (Plate CXXV. fig. 26.)

Apatela falcula, Grote, Can. Ent. ix. p. 86 (1877); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 109, pl. xii. f. 8; Smith, Cat. Noct. N. Am. p. 38.

Head and thorax violaceous grey tinged with brown; palpi white at base and with black band on 2nd joint; frons black at sides; antennæ with the 1st joint white in front; shoulders with black stripes; patagia on outer side and metathorax edged with rufous; tibiæ with slight black streaks; abdomen white thickly irrorated with greyish fuscous leaving white segmental lines. Fore wing purplish grey suffused with brown; subbasal line represented by a black striga from costa; a strong black streak in submedian fold from base to just beyond antemedial line defined by white above, giving off spurs below at middle and above and below at antemedial line, which is represented by a black bar in cell, otherwise almost obsolete, oblique, sinuous: orbicular and reniform large, defined by black, the former rather diamond-shaped, open above, the latter open above and below; a rather diffused medial black striga from costa; postmedial line black slightly defined by white on inner side, more strongly in submedian interspace, strongly bent outwards below costa, then sinuous, angled outwards at veins 4, 3, then incurved and angled outwards on vein 1, some white points beyond it on costa and a strong black streak from it to termen in submedian fold; traces of a whitish subterminal line slightly excurved below vein 7 and at middle, the interspaces beyond it with slight dark streaks to the terminal series of points; cilia white mixed with fuscous at tips. Hind wing of male white, the apical area tinged with brown, of female ochreous white, the terminal area suffused with fuscous; the underside white slightly irrorated with brown, a small discoidal spot, postmedial series of minute dark streaks on the veins, incurved below vein 4, and terminal series of black striæ.

Hab. CANADA, Manitoba, Cartwright (*Heath*), 1 ♀, Winnipeg, Aweme (*Criddle*), 1 ♂; U.S.A., New York, Illinois (*Bean*), 1 ♀ type, Minnesota. *Exp.* 42 millim.

Larva. Smith & Dyar, Pr. U. S. Nat. Mus. xxi. p. 110.

Dark brown mottled with greenish, the ventral surface greenish white; a darker dorsal line; warts small with one or two hairs, i. and ii. on somite 12 larger; head brownish in front, greenish at sides. Food-plant: Hazel.

3702. Acronycta elizabeta. (Plate CXXV. fig. 27.)

Acronycta elizabeta, Smith, Trans. Am. Ent. Soc. xxxiii. p. 125 (1907).

Head and thorax whitish tinged with brown especially on vertex of head; palpi dark brown, white on outer side at base and at base of 3rd joint; antennæ whitish at base in front; tegulæ with brown line at base and dorsal streak; tibiæ streaked with dark brown,

the tarsi dark brown ringed with white; abdomen dark brown. Fore wing grey tinged and irrorated with brown; subbasal line represented by double oblique striæ from costa and single striga from cell; a strong black-brown streak from base below the cell defined by white above, slightly forked at middle below and forked at antemedial line, which is double, angled outwards below costa, then oblique and slightly sinuous; orbicular small, round, hardly defined except on outer side; reniform an indistinctly defined narrow lunule with oblique black striga on lower inner edge; medial line oblique from costa to reniform, indistinct and sinuous from lower angle of cell to inner margin; postmedial line brown defined by whitish on inner side, double at costa, bent outwards below costa, then minutely waved, excurved to vein 4, slightly angled at veins 4, 3, then incurved and angled outwards at vein 1, some white points beyond it on costa, with a slight black streak from it to subterminal line in discal fold and stronger streak from just before it to termen in submedian fold; subterminal line represented by a series of whitish lunules slightly incurved at discal fold and more strongly below vein 3; cilia whitish intersected by slight dark streaks from just before termen and with dark line through them. Hind wing whitish suffused with brown; cilia white with slight dark line through them and some dark points at tips; the underside whitish tinged with brown, a discoidal spot, indistinct curved postmedial line, and terminal series of points and striæ.

Hab. U.S.A., New Jersey, Elizabeth, cotype † ♀ in Coll. J. B. Smith, Rhode I., 1 ♂. *Exp.* ♂ 42, ♀ 44 millim.

3703. Acronycta revellata. (Plate CXXV. fig. 28.)

Acronycta revellata, Smith, Ent. News Philad. viii. p. 150 (1897); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 112; Dyar, Cat. Lep. N. Am. p. 102.

♂. Head and thorax grey-white mixed with black; palpi white at base and with black band on 2nd joint; frons whitish at middle; shoulders with blackish streaks; tibiæ slightly streaked with black, the tarsi banded with black; abdomen grey-white dorsally suffused with brown. Fore wing grey-white suffused with brown and irrorated with fuscous; subbasal line represented by a diffused black striga from costa; a black streak defined by whitish above below submedian fold from base to just beyond antemedial line, which is hardly traceable, double, very oblique; orbicular and reniform whitish defined by black and with brownish centres, the former round, the latter produced at upper and lower extremities, some slight dark suffusion between them extending to costa; postmedial line blackish slightly defined by whitish on inner side, bent outwards below costa, slightly incurved at discal fold, angled outwards at veins 4, 3, then strongly incurved, a strong black streak in submedian fold from well before it to termen and some white

points beyond it on costa; traces of a diffused whitish subterminal line excurved below vein 7 and at middle; a terminal series of small black spots with dark streaks from them intersecting the cilia, which are whitish with a dark line through them. Hind wing pure white, the veins faintly tinged with brown; the underside with the costal area slightly irrorated with brown, a slight discoidal point and traces of a curved postmedial line from costa to vein 2.

♀. Hind wing with the terminal area slightly tinged with brown.

Hab. U.S.A., Washington, Colorado, Glenwood Springs (*Barnes*), 1 ♂, 2 ♀, Salida. *Exp.* 42–44 millim.

Larva. Head heavily mottled with black, the vertices of the lobes red. Body green, a purple-brown dorsal stripe, broken in the incisures, widened on joints 2 and 5 and on 7 to 11, the latter containing a green patch; some brown spots on the sides; hairs fine, sparse. Food-plants: Birch, &c.—H. G. D.

3704. **Acronycta grisea.** (Plate CXXV. fig. 29.)

Acronycta grisea, Wlk. ix. 56 (1856); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 113, pl. iii. f. 4; Smith, Cat. Noct. N. Am. p. 37.
Acronycta pudorata, Morr. Ann. Lyc. Nat. Hist. N.Y. xi. p. 93 (1876).

Head and thorax violaceous grey suffused with brown; palpi white at base and with black band on 2nd joint; shoulders and outer edges of patagia with black streaks; abdomen white dorsally suffused and irrorated with brown. Fore wing violaceous grey suffused with brown and slightly irrorated with fuscous; subbasal line represented by double dark striæ from costa; a sinuous black streak in submedian fold from base to just beyond antemedial line, which is double, indistinct except at costa, and the inner line black from costa to submedian fold, oblique, slightly sinuous; orbicular and reniform somewhat pale defined by black, the former round; traces of a medial line very oblique from costa to reniform and incurved below the cell; postmedial line black defined by whitish on inner side, prominently in submedian interspace, bent outwards below costa, then dentate, strongly incurved below vein 3 and bent outwards to inner margin, a black streak in submedian fold from well before it to termen, some white points beyond it on costa; a faint diffused whitish subterminal line excurved below vein 7 and at middle; a terminal series of dark striæ; cilia white with a slight dark line near base and series of points at tips. Hind wing white; the veins slightly tinged with brown and the terminal area slightly irrorated with brown from apex to vein 3; the underside with the costal area slightly irrorated with brown, a small black discoidal spot, traces of a waved postmedial line with brownish spot at costa, excurved to vein 4, then incurved, and terminal series of slight lunules.

Hab. Canada, Hudson's Bay (*Barnston*), 1 ♂, 1 ♀ type, Ottawa (*Fletcher*), 1 ♂, Manitoba, Aweme (*Criddle*), 1 ♂, Cartwright

(*Heath*), 2 ♂, 1 ♀, Alberta, Calgary (*Wolley-Dod*), 2 ♂, 2 ♀; U.S.A., New York, 1 ♀, Georgia, Mississippi, Missouri. *Exp.* 34–42 millim.

Larva. Smith & Dyar, Pr. U. S. Nat. Mus. xxi. p. 114.

Head heavily mottled with black, the vertices of the lobes red; body green; a purple-brown dorsal stripe, broken at the incisures, widened on joints 2 and 5 and 7 to 11, the latter containing a green patch; some brown spots on the side; hairs fine, sparse. Food-plants: Birch, &c.—H. G. D.

3705. Acronycta alni.

Noctua alni, Linn. Syst. Nat. ed. xii. p. 845 (1767); Esp. Schmett. iv. pl. 116, ff. 4–6; Donov. Brit. Ins. x. p. 8, pl. 327. f. 2; Walch, Naturf. xii. p. 58, pl. 1. ff. 14–16; Capieur, Naturf. xiv. p. 91, pl. 4. f. 11; Fuessly, Ent. Mag. ii. p. 43, pl. 1. ff. 5–8; Hubn. Eur. Schmett., Noct. f. 3; Dup. Lép. Fr. vi. p. 235, pl. 87. f. 5; Steph. Ill. Brit. Ent., Haust. iii. p. 38; Frr. Beitr. pl. 16; Staud. Cat. Lep. pal. p. 132.

Noctua degener, Schiff. Wien. Verz. p. 70 (1776).

Acronycta steinerti. Caspari, Soc. Ent. xiii. p. 3 (1898); id. Jahrb. Nass. lii. p. 178, pl. 4. ff. 8, 9; Steinert, Iris, xi. p. 299, & xii. pl. 2. f. 5.

Acronycta carola, Philipps, Soc. Ent. xiii. p. 50 (1898); Caspari, Jahrb. Nass. lii. p. 181, pl. 4. ff. 5–7.

Head and thorax white mixed with some black hairs; 2nd joint of palpi with black band; frons black at sides; antennæ black; tegulæ with slight dorsal black streak; shoulders and outer edges of patagia with black streaks; tibiæ streaked with black, the tarsi black ringed with white; abdomen white mixed with fuscous, the basal crest with black. Fore wing whitish suffused with brown, the inner area below the cell and vein 3 suffused with black leaving some white at base of inner margin and tornus; subbasal line represented by a blackish striga from costa; antemedial line double filled in with whitish, slightly angled outwards below costa, interrupted by black in submedian fold and excurved above inner margin; orbicular whitish defined by black, rather elongate elliptical and with brown streak in centre, a broad diffused black band beyond it from costa to the black inner area obscuring the inner part of reniform, which is defined by black, its outer part brownish and its upper and lower extremities produced; postmedial line black defined by white on inner side on the pale area and by brownish on the black area, bent outwards below costa, then minutely waved, angled outwards at veins 4, 3, then strongly incurved and angled outwards on vein 1, crossed by a strong black streak in submedian fold from well before it to termen and with slight black streak from just before it to termen in discal fold, some white points beyond it on costa; a white subterminal line angled outwards at vein 7 and excurved at middle; a terminal series of black striæ; cilia chequered brownish white and black. Hind wing white; a slight discoidal spot; a postmedial series of minute black streaks on the veins; the veins of terminal area towards apex and the termen from apex to vein 3 irrorated with

brown; cilia white tinged with brown at apex and intersected with black from apex to submedian fold; the underside with black discoidal spot, brownish marks at middle of costa and postmedial line which is rather diffused to vein 6, then represented by short black streaks on the veins, a terminal series of black striæ.

Ab. 1. *steinerti*. Fore wing much more suffused with brown.

Hab. Britain, Leech Coll.; France, Sand Coll.; Germany, Zeller, Frey and Leech Colls.; Austria, Leech Coll.; Hungary; Switzerland; Italy; Scandinavia; Russia, Finland, Livonia, Zeller Coll., St. Petersburg; Armenia; E. Siberia, Amurland, Ussuri; Japan, Yesso (*Pryer*), 1 ♂. *Exp.* 34–44 millim.

Larva. Meyr. Lep. Brit. p. 140; Barrett, Brit. Lep. iii. p. 238, pl. 121, f. 1.

Black: a series of transverse yellow bands; 1st somite with four long black hairs with broadly spatulate tips, the 4th–9th and 11th and 12th somites each with two hairs; head black, when young whitish suffused with slate-grey on somites 4–9, somites 4–8 with slight dorsal prominences; resting with the head bent round against 8th somite and closely resembling a patch of birds' excrement; when adult the larva can emit a strong odour like carburetted hydrogen. Food-plants: Alder, Birch, Beech, *Cornus*, &c. 7–9.

3706. **Acronycta funeralis.** (Plate CXXV. fig. 30.)

Acronycta funeralis, Grote & Rob. Proc. Ent. Soc. Philad. vi. p. 17, pl. 3. f. 8 (1866); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 102, pl. iii. f. 7; Smith, Cat. Noct. N. Am. p. 43.

♂. Head and thorax white slightly mixed with black-brown; 2nd joint of palpi with black band; sides of frons black; antennæ brown, the basal joint black behind; shoulders and outer edges of patagia with black stripes; tibiæ striped with black, the tarsi banded black and white; abdomen white mixed with fuscous, the dorsal crest blackish. Fore wing white more or less irrorated with fuscous, the terminal area tinged with grey-green, the inner area black extending to cell at base, leaving some white on base of inner margin and narrowing to a point at tornus; subbasal line represented by an oblique wedge-shaped black spot from costa, the antemedial line by a wedge-shaped spot from costa, bar from cell and indistinct double line filled in with greyish angled outwards above inner margin; orbicular and reniform slightly defined by fuscous, the former large, round, more distinctly defined by black on outer side, the latter on inner side, a diffused black patch from middle of costa extending to between their upper parts; postmedial line fine, blackish defined by white on inner side, bent outwards below costa, then waved, strongly incurved below vein 4 and angled outwards on vein 1, crossed by a strong black streak in submedian fold from just before it to termen with blackish suffusion above and below it just beyond postmedial line, the costa beyond it with alternating black and white spots; a whitish subterminal line excurved below vein 7 and at middle, angled inwards at discal fold and incurved below vein 3; cilia chequered black and white. Hind wing white,

the veins of terminal area slightly streaked with fuscous, the apex tinged with brown; a terminal series of black striæ from apex to submedian fold; cilia white intersected with black-brown; the underside with the costal area tinged with brown in parts, a blackish discoidal spot, excurved postmedial line from costa to vein 7, and series of short streaks on the veins.

♀. Hind wing with the terminal area suffused with fuscous and the postmedial line more distinct.

Hab. Canada; U.S.A., New Hampshire, Jefferson, New York, Keene Valley, Long I., Pennsylvania, Mt. Airy, Pittsburg, Kentucky, 1 ♂, Mississippi, Missouri, Kansas City. *Exp.* 36 millim.

Larva. Smith & Dyar, Pr. U. S. Nat. Mus. xxi. p. 103; Harris, Ent. Corr. 1869, p. 313, pl. iii. f. 2.

Head shining black. Body black, with a row of white diamond-shaped dorsal spots, those on joints 5 to 12 with a black medial transverse line; subdorsal setæ long, spatulate, black. Food-plants: Apple, &c.—H. G. D.

3707. Acronycta morula. (Plate CXXV. fig. 31.)

Acronycta morula, Grote & Rob. Trans. Am. Ent. Soc. ii. p. 196. pl. iii. f. 75 (1868); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 76, pl. ii. f. 10; Smith, Cat. Noct. N. Am. p. 36.
Acronycta ulmi, Harris, Ent. Corresp. 1869, p. 312, pl. iii. f. 10 (larva).

Head and thorax white mixed with dark brown; 2nd joint of palpi with black-brown patch at sides; frons with lateral dark spots; patagia with some dark brown on edges; vertex of thorax with pale rufous fascia except on metathorax; shoulders with black stripes; tibiæ with black streaks, the tarsi slightly banded with black above; abdomen whitish irrorated with brown and dorsally suffused with reddish brown except at extremity. Fore wing grey-white irrorated with brown; subbasal line represented by two oblique dark striæ from costa; a sinuous black streak in submedian fold defined by red-brown suffusion below and extending to the antemedial line, which is double, the lines widely separated towards costa, angled outwards below costa, incurved in cell, angled inwards below the cell and on vein 1 and strongly excurved above inner margin; orbicular and reniform defined by brown, the former small, round, the latter large and with its centre tinged with rufous, an oblique dark striga above it from costa and an indistinct oblique sinuous line from lower angle of cell to inner margin; postmedial line brown defined by whitish on inner side, double at costa, strongly bent outwards below costa, then minutely waved, slightly incurved at discal fold, angled outwards at vein 3, then bent inwards to below angle of cell and angled outwards on vein 1, some brown suffusion beyond it especially between veins 3 and 1, with a black streak from it to termen in discal fold and crossed by a black streak in submedian fold from medial line to termen, some slight white streaks beyond it

on costa ; the veins of terminal area with slight dark streaks ; traces of a whitish subterminal line excurved below vein 7 and at middle, then incurved ; a terminal series of black points with brown marks beyond them on the cilia. Hind wing whitish uniformly suffused with fuscous and tinged with rufous ; cilia white with a dark line near tips towards apex ; the underside white irrorated with brown especially on terminal area, a black streak in cell from base to near the large black discoidal spot, a minutely waved postmedial line excurved to vein 4, then incurved, traces of a diffused subterminal band and a terminal series of black points.

Hab, Canada, Ottawa (*Fletcher*, *Young*), 2 ♂, 2 ♀, Ontario, 1 ♀ ; U.S.A., Maine, New York (*Doubleday*), 1 ♀, Evans Center (*Grote*), 3 ♂, 1 ♀, Rochester, Kendall, Long Island, Otto, Distr. of Columbia, Washington, Pennsylvania, Wisconsin, Illinois, Missouri, Kansas (*Snow*), 1 ♂, 1 ♀, Texas. *Exp.* 52–56 millim.

Larva. Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 78, pl. vii. ff. 20, 21.

Head blackish, the vertices of the lobes red. Body somewhat flattened, a diamond-shaped elevation on joints 5, 8, and 12 dorsally ; dull brown, mottled, a blackish shaded dorsal band enclosing the dorsal elevations ; hairs short, whitish, growing from the skin. Food-plants : Elm, Apple, Linden.—H. G. D.

*3708. Acronycta transversata. (Plate CXXV. fig. 32.)

Acronycta transversata, Smith, Ent. News Philad. viii. p. 149 (1897) ; Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 65, pl. x. f. 10 ; Dyar, Cat. Lep. N. Am. p. 100.

Head, thorax, and abdomen ash-grey irrorated with black ; shoulders with black streaks. Fore wing ash-grey irrorated with black ; a black streak below base of cell extending to the antemedial line ; subbasal line represented by a black spot on costa ; antemedial line represented by one or two spots on costa, two angled marks in submedian interspace and one or two lunules on inner margin sometimes forming an almost continuous line ; orbicular defined by black, small, round, the reniform very ill-defined, dark ; medial line represented by an oblique blackish bar from costa to reniform, inwardly oblique and irregular from lower angle of cell to inner margin ; postmedial line black, bent outwards below costa, then minutely waved, oblique below vein 4 and angled inwards in submedian fold, crossed by a short black streak in discal fold and by a streak in submedian fold extending to near termen ; the terminal area somewhat darker : the subterminal line absent ; a terminal series of black points ; the cilia intersected with black. Hind wing white, the terminal area tinged with brown in female ; the underside with discoidal spot and postmedial line.

Hab. U.S.A., Colorado. *Exp.* 42–46 millim. This species is unknown to me, figured from a drawing from cotype in Coll. J. B. Smith.

3709. Acronycta tota. (Plate CXXVI. fig. 1.)

Apatela tota, Grote, N. Am. Ent. i. p. 12 (1878); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 66, pl. x. f. 11; id. Cat. Noct. N. Am. p. 39.

♂. Head and thorax fuscous-brown mixed with white; palpi white below, frons white at sides; basal joint of antennæ white in front; patagia white at outer edges; tarsi banded fuscous and white; abdomen white, dorsally suffused and irrorated with fuscous. Fore wing white suffused and irrorated with brown; subbasal line represented by a slight dark striga from costa; a sinuous black streak below base of cell extending to the antemedial line, which is double, slightly excurved from costa to submedian fold where it is angled inwards and the inner line prominently black, then again excurved; orbicular and reniform defined by black, the former very small, elongate; a medial line, black from costa to reniform, then indistinct and angled inwards below vein 2; postmedial line slightly defined by whitish on inner side, bent outwards below costa, then very minutely waved, excurved to vein 4, then strongly incurved and with slight black streak from it to termen in submedian fold; the veins of terminal area slightly streaked with brown; subterminal line absent; a terminal series of black points; cilia white and brown mixed, the tips chequered white and brown. Hind wing white, the veins brownish, the terminal area slightly irrorated with brown; a slight discoidal point, indistinct curved postmedial line and terminal series of striæ; the underside with the costal area irrorated with fuscous, a black discoidal spot.

Palpi very short, hardly reaching middle of frons.

Hab. U.S.A., Texas (*Belfrage*), 1 ♂ type, Comal Co. *Exp.* 38 millim.

3710. Acronycta radcliffei. (Plate CXXVI. fig. 2.)

Apatela radcliffei, Harv. Bull. Buff. Soc. Nat. Sci. ii. p. 270 (1875); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 107, pl. xii. f. 4; Smith, Cat. Noct. N. Am. p. 39.

♂. Head and thorax pale violaceous grey suffused with fuscous; 2nd joint of palpi with black band; shoulders streaked with black; mid and hind tibiæ streaked with black, the tarsi banded with black; abdomen white dorsally tinged with pale brown. Fore wing violaceous white suffused and irrorated with pale brown, the terminal area whiter; subbasal line indistinct, from costa to median fold in which there is a sinuous black streak defined by white above and extending to well beyond antemedial line, which is double, oblique, slightly bent outwards at submedian fold and the outer line angled outwards below costa; orbicular with slight whitish annulus defined by black, somewhat oblique elliptical; reniform with slight whitish lunule defined by black on inner side, undefined on outer except by slight black striæ at upper and lower extremities; medial line very faint, diffused, oblique from costa to

lower angle of cell, then inwardly oblique to inner margin at antemedial line; postmedial line black defined by white on inner side, bent outwards below costa, excurved and slightly sinuous to vein 4, then incurved, crossed by a fine black streak in submedian fold from medial line to termen; subterminal line only defined by the contrast between the postmedial and terminal areas, dentate, excurved at vein 7 and middle; the veins of terminal area with slight dark streaks; a terminal series of black points with slight brown streaks from them intersecting the cilia. Hind wing white, the veins of terminal half tinged with brown, the termen suffused with brown from apex to vein 2; the underside with the costal area irrorated with brown, a black discoidal spot, traces of a postmedial line with minute dark streaks on the veins and blackish spots at costa and submedian folds, a terminal series of small black lunules.

♀. Head, thorax, and fore wing browner; abdomen strongly suffused with brown, paler at base; hind wing tinged with brown, the terminal area suffused with dark brown, a discoidal spot and sinuous postmedial line showing through to upperside; cilia mixed with brown; the underside with the costal and terminal areas strongly irrorated with brown, the postmedial line strong, minutely waved, excurved to vein 4, then oblique.

Ab. 1. ♂. Hind wing wholly suffused with brown, the cilia white with brown points, the underside as in female.—Vancouver.

Hab. Canada, Manitoba, Aweme (*Criddle*), 1 ♀, Vancouver I. (*J. J. Walker*), 1 ♂; U.S.A., New Hampshire, Massachusetts, New York, Evans Center (*Grote*), 1 ♂, 2 ♀ type, Albany, Adirondack Mts., Virginia. *Exp.* 40–44 millim.

Larva. Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 108, pl. v. f. 9 & pl. vi. f. 10.

Head black below, the upper half red. Body black, with a dorsal, and three yellow stripes on each side; cervical shield, anal plate and a dorsal spot on joints 12 and 13 black; hairs fine, pale, sparse, mostly growing from the tubercles dorsally. Food-plant: Wild cherry.—H. G. D.

3711. **Acronycta felina.** (Plate CXXVI. fig. 3.)

Apatela felina. Grote, Bull. U.S. Geol. Geog. Surv. Terr. v. p. 208 (1880); Smith & Dyar, Proc. U.S. Nat. Mus. xxi. p. 53, pl. xi. f. 9; Smith, Cat. Noct. N. Am. p. 39.

♂. Head and thorax white mixed with brown; sides of palpi and frons blackish; antennæ blackish; shoulders with black stripes; tibiæ streaked with black; abdomen white tinged with brown and irrorated with fuscous. Fore wing white irrorated with fuscous, the veins with slight dark streaks, the terminal area slightly darker; a sinuous black streak below base of cell; antemedial line represented by a slight dark mark on costa; orbicular slightly defined by black, elongate, pointed at extremity; reniform represented by a blackish discoidal spot with oblique brown bar above it from costa; postmedial line slight, dark, unusually near termen, excurved below costa, incurved below vein 4,

and slightly angled outwards on vein 1; crossed by slight dark streaks in discal and submedial folds; cilia white, intersected by brown streaks in the interspaces. Hind wing white, the veins irrorated with brown, the terminal area very slightly irrorated with brown; a slight brown terminal line; cilia white, intersected by faint brown streaks in the interspaces from apex to vein 2; the underside with dark discoidal spot and postmedial series of minute dark streaks on the veins.

Hab. U.S.A., Washington, Seattle, Colorado, Glenwood Springs, California, Sierra Nevada, 2 ♂ type. *Exp.* 40–45 millim.

Larva. Head shining black. Body whitish or yellowish, with a reddish-brown dorsal band, a narrower lateral one, and shading subventrally; hairs long, fine, soft, growing from the skin, white or yellow; a slender single dorsal black pencil on joints 5, 7, and 12. Food-plant: Poplar.—H. G. D.

*3712. Acronycta frigida. (Plate CXXVI. fig. 4.)

Acronycta frigida, Smith, Ent. News Philad. viii. p. 148 (1897); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 54, pl. xi. ff. 6–10; Dyar, Cat. Lep. N. Am. p. 100.

Head, thorax, and abdomen dark blue-grey thickly irrorated with black; palpi blackish at sides; shoulders with a black streak. Fore wing dark blue-grey thickly irrorated with black; a black streak below base of cell almost connected with the streak across postmedial line; subbasal line absent or represented by a black point on costa; antemedial line absent or represented by a black spot on costa and angled mark in submedian interspace; orbicular slightly defined by black, narrow and elongate; medial line absent or represented by dark spots on costa and inner margin; postmedial line defined on inner side by whitish, bent outwards below costa, then minutely waved, slightly incurved below vein 4 and excurved at vein 1, crossed by black streaks in discal and submedian folds, the former very slight; cilia intersected with black. Hind wing white with discoidal spot showing through from underside and dark terminal line; the underside white with dark irroration, a discoidal spot sometimes connected by a streak with base, and postmedial line.

Hab. U.S.A., California, Sierra Nevada, Truckie. *Exp.* 44 millim. This species is unknown to me, figured from a drawing from type in U.S. Nat. Mus.

Larva. As in *A. felina*, the hairs slightly coarser and less abundant. Food-plant: Willow.—H. G. D.

3713. Acronycta cyanescens. (Plate CXXVI. fig. 5.)

♂. Head, thorax, and abdomen blue-grey mixed with fuscous; palpi blackish at sides. Fore wing blue-grey thickly irrorated with blackish, the veins with slight dark streaks; a slight sinuous black streak below the cell to near antemedial line, which is blackish and

diffused towards costa, then very indistinct, oblique; orbicular absent; reniform represented by traces of a slight black lunule with diffused oblique black mark above it from costa; postmedial line whitish, defined on inner side by black towards costa, slightly bent outwards below costa, then lunulate, excurved to vein 4, then incurved and bent outwards at vein 1, crossed by a slight black streak in submedian fold; subterminal line absent; a series of small black spots on termen and cilia. Hind wing white, the veins and terminal area slightly irrorated with fuscous; a series of slight fuscous spots on termen and cilia which are white mixed with fuscous; the underside with the costal area slightly irrorated with fuscous, a blackish discoidal spot and postmedial series of slight dark streaks on the veins.

Hab. Canada, Vancouver (*Danby*), 3 ♂ type. *Exp.* 44 millim.

*3714. Acronycta pacifica. (Plate CXXVI. fig. 6.)

Acronycta pacifica, Smith, Ent. News Philad. viii. p. 148 (1897); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 56, pl. xi. f. 5; Dyar, Cat. Lep. N. Am. p. 100.

Head, thorax, and abdomen ash-grey with some dark irroration. Fore wing ash-grey with dark irroration and streaks on the veins; a black streak below base of cell extending to the antemedial line, which is very indistinct, double, bisinuate, angled inwards in submedian fold; orbicular very small and slightly defined by black, narrow and elongate; reniform a slight dark mark; medial line represented by a dark mark on costa; postmedial line black, bent outwards below costa, then minutely waved, excurved to vein 4, then incurved and stronger in submedian interspace, where it is crossed by a black streak extending to termen, the area beyond it rather darker; subterminal line absent; cilia intersected with black. Hind wing white, slightly tinged with fuscous in female; the underside with discoidal spot and postmedial line.

Hab. U.S.A., California, Sierra Nevada. *Exp.* 40–46 millim. This species is unknown to me, figured from a drawing from co-type in Coll. J. B. Smith.

3715. Acronycta interrupta. (Plate CXXVI. fig. 7.)

Acronycta interrupta, Guen. Noct. i. p. 46 (1852); Dyar, Cat. Lep. N. Am. p. 101.

Acronycta occidentalis, Grote & Rob. Proc. Ent. Soc. Phil. vi. p. 16 (1866); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 79, pl. ii. f. 8; Smith, Cat. Noct. N. Am. p. 35.

Head and thorax brownish white; palpi with black patches at sides of 2nd joint; lower part of frons tinged with rufous; shoulders with blackish streaks; tegulæ with rufous streaks at middle and sides; patagia with black streaks on outer edges; tibiæ with interrupted black streaks; abdomen grey, dorsally tinged with fuscous, ventrally white. Fore wing brownish white; subbasal line represented by a slight dark striga from costa; a strong black

streak in submedian fold to just beyond the antemedial line, which is indistinct, double, the lines rather widely separated towards costa, oblique, sinuous; orbicular incompletely defined by black, rather oblique elliptical; reniform faintly defined, with an oblique black striga on inner side, an oblique black striga above it from costa; postmedial line blackish defined by white on inner side, double at costa, bent outwards below costa, then dentate, excurved to vein 4, then strongly incurved, some brown suffusion beyond it between veins 3 and 1, crossed by black streaks in discal and submedian folds, the latter extending almost to termen, some slight white streaks with black points between them beyond it on costa; subterminal line absent; a series of small black spots on termen and base of cilia. Hind wing whitish suffused with reddish brown; cilia white; the underside white, the costal area irrorated with brown, a slight dark streak in base of cell, a black discoidal spot, an indistinct diffused sinuous postmedial line with minute dark streaks on the veins, and terminal series of small black lunules.

Hab. Canada (*Norman*), 2 ♂, Ontario, Ottawa (*Fletcher, Young, Gibson*), 4 ♂, 2 ♀, London (*Saunders*), 2 ♂, 1 ♀, Manitoba, Aweme (*Criddle*), 1 ♀; U.S.A., Maine, New Hampshire, New York, 3 ♂, 5 ♀, Buffalo, 1 ♂, 1 ♀, Trenton Falls (*Doubleday*), 2 ♂, Schenectady, Kendall, Rochester, Long Island, Rhode Island, 1 ♀, Pennsylvania, New Brighton (*Merrick*), 1 ♀, New Jersey, Distr. of Columbia, Washington, Michigan, Hastings, 1 ♂, Wisconsin, Milwaukee Co., 1 ♂, Georgia, Nebraska, West Point, Kansas (*Snow*), 1 ♂, 1 ♀. *Exp.* 40–46 millim.

Larva. Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 80, pl. v. ff. 7, 8.

Head black, the vertices of the lobes red. Body purplish on the sides, with a blackish dorsal stripe that ends on a rounded elevation on joint 12, and contains a series of dorsal markings consisting of a square black spot with two red and two yellow dots with a lateral arm; a broad greyish lateral band; hairs growing from the tubercles dorsally, supplemented by whitish ones laterally, growing from the skin. Food-plants: Elm, Apple, &c.—H. G. D.

3716. Acronycta spinigera. (Plate CXXVI. fig. 8.)

Acronycta spinigera, Guen. Noct. i. p. 45 (1852); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 122, pl. xii. f. 5; Smith, Cat. Noct. N. Am. p. 39.
Apatela harveyana, Grote, Proc. Ac. Nat. Sci. Phil. 1875, p. 418; Smith, Cat. Noct. N. Am. p. 39.

Head and thorax white mixed with brown; palpi white at base, the 2nd joint with black band; shoulders streaked with black; mid and hind tibiæ streaked with black, the tarsi black ringed with white; abdomen whitish largely mixed with brown, the ventral surface paler. Fore wing whitish thickly irrorated with brown; subbasal line represented by double dark striæ from costa and single striga from cell; a fine black streak in submedian fold defined by whitish above and brown below and extending to outer edge of antemedial line, which is double, oblique, waved, angled

outwards below costa and bent inwards to inner margin; orbicular and reniform defined by blackish, the former somewhat oblique elliptical, the latter with some brown in centre; an oblique brown bar from costa to reniform and indistinct oblique waved line from cell to inner margin; postmedial line double filled in with white, the outer line black, bent outwards below costa, then dentate, slightly angled inwards at discal fold, incurved below vein 4 and angled outwards at vein 1, crossed by a fine black streak in submedian fold from medial line to termen and with some white points beyond it on costa; a minutely waved whitish subterminal line with slight dark streaks from it to the terminal series of points; cilia with slight dark line through them. Hind wing whitish suffused with reddish brown; cilia white; the underside white irrorated with brown, a dark streak in base of cell, black discoidal lunule, indistinct postmedial line excurved to vein 4, then incurved, and terminal series of small black lunules.

Hab. U.S.A., Maine, New York (*Doubleday*), 1 ♂ type, Evan's Center (*Grote*), 5 ♂, 3 ♀, Pennsylvania, Sharon, 1 ♀ type *harveyana*, Wisconsin, Missouri, Kansas, Texas. *Exp.* 44–50 millim.

3717. Acronycta auricoma.

Noctua auricoma, Schiff. Wien. Verz. p. 67 (1776); Fabr. Mant. Ins. ii. p. 174 (1787); Esp. Schmett. iv. pl. 117. ff. 4–6 & 117 A. ff 1, 2; Hübn. Eur. Schmett., Noct. f. 8; Dup. Lép. Fr. vi. p. 236, pl. 87. f. 6; Frr. Neue Beitr. pl. 542; Steph. Ill. Brit. Ent., Haust. iii. p. 41; Staud. Cat. Lep. pal. p. 133.
Noctua lapathi, Schrank, Faun. Boica, p. 308 (1802).
Noctua similis, Haw. Lep. Brit. p. 180 (1809); Steph. Ill. Brit. Ent., Haust., iii. p. 41.
Noctua pepli, Hübn. Eur. Schmett., Noct. f. 614 (1818).
Acronycta alpina, Frr. Neue Beitr. pl. 623 (1858).
Acronycta pyhævaaræ, Hffm. Stett. ent. Zeit. 1893, p. 126.

Head and thorax white tinged with brown and mixed with black; palpi with the 2nd joint black above; tegulæ edged with blackish; patagia with white patches and black outer edges; tarsi blackish ringed with white; abdomen whitish dorsally suffused with ochreous brown, the basal crest black and white, the extremity and ventral surface irrorated with black. Fore wing grey-white thickly irrorated with black and tinged with brown in parts; subbasal line represented by double oblique black striæ from costa and single striga from cell with black streak from it to antemedial line, which is double, oblique, waved, angled inwards in submedian fold and on vein 1; orbicular defined by black, somewhat oblique elliptical; reniform defined by black and with spot on inner side below, the black on outer side reduced to points; an oblique black bar from costa to reniform and oblique waved line from lower angle of cell to inner margin; postmedial line black defined by whitish on inner side, bent outwards below costa, then dentate, strongly incurved below vein 3 and angled outwards at vein 1, crossed by a black streak in submedian fold from medial to subterminal lines, with some dark suffusion beyond it and whitish points on costa;

subterminal line represented by a series of whitish marks in the interspaces with blackish points on their outer side; a terminal series of slight black points with dark marks beyond them on the cilia. Hind wing white tinged with ochreous brown especially towards base; cilia white; the underside white slightly tinged with ochreous, the costal area with very slight brown irroration.

Ab. 1. *pepli*. Fore wing darker and more uniform in colour.

Hab. Britain, Leech Coll.; France, Leech Coll.; Denmark, Leech Coll.; Germany, Zeller & Frey Colls.; Austria; Hungary; Switzerland, Frey Coll.; Spain, Catalonia; Italy; Norway, Surendal (*Christy*); Lapland; Russia, Finland, Esthonia, Zeller Coll., St. Petersburg, Zeller Coll.; Armenia; N. Siberia; E. Siberia, Amurland. *Exp.* 36–42 millim.

Larva. Meyr. Brit. Lep. p. 143; Barrett, Lep. Brit. iii. p. 259, pl. 121. f. 4.

Black, the segmental incisions greyer; somites 2–12 each with two or four orange-red tubercles bearing fascicles of orange hair, the other hairs blackish; head and thoracic plate black. Food-plants: Oak, Birch, *Rubus*, &c. 6–7 and 9–4.

3718. **Acronycta pulverosa**, n. sp. (Plate CXXVI. fig. 9.)

Acronycta pruinosa, Leech, Trans. Ent. Soc. 1900, p. 104 (nec Guen.).

Head and thorax grey-white mixed with dark brown; palpi with black patch on 2nd joint at sides; tegulæ with dark marks near tips at middle; patagia with black streaks on outer edges; tarsi banded with fuscous; abdomen grey-white irrorated with fuscous and dorsally suffused with brown. Fore wing grey-white irrorated and in parts suffused with brown; subbasal line represented by double black striæ from costa; a slight sinuous black streak in submedian fold from base to antemedial line, its lower edge expanding into a spot at middle with brownish mark beyond it; antemedial line rather indistinct, double, oblique, waved, angled inwards below costa and cell and on vein 1; orbicular whitish defined by black at sides, rather oblique quadrate; reniform defined by black, the black on outer edge reduced to points, its centre suffused with brown, somewhat constricted at middle; an oblique dark striga from costa to reniform and traces of an oblique line from cell to inner margin angled outwards on vein 1; postmedial line double filled in by white lunules, the inner line indistinct except at costa, bent outwards below costa, then minutely dentate, incurved below vein 3 and angled outwards on vein 1, a black streak from it to termen in submedian fold, some brown suffusion in discal and submedian folds and some white points with slight dark streaks between them beyond it on costa; faint traces of a subterminal series of whitish marks in the interspaces; a terminal series of small black lunules with slight brown marks beyond them on the cilia. Hind wing white tinged with brownish fuscous, the terminal area suffused with brown from apex to vein 2; an indistinct postmedial sinuous line; cilia white with a series of brown spots; the underside white faintly tinged with brown, a dark

discoidal spot, traces of postmedial line with dark spots on and below costa and in discal and submedian folds, and terminal series of slight dark lunules.

Ab. 1. Fore wing more suffused with fuscous brown.

Hab. Japan (*Pryer*), 1 ♂, 1 ♀ type, Yokohama (*Pryer*), 1 ♂, Shimonosaki (*Leech*), 1 ♂, Kiushiu, 1 ♂; N. China, Wei-ha-wei (*Fletcher*), 1 ♂. *Exp.* 34–38 millim.

3719. Acronycta menyanthidis.

Noctua menyanthidis, View. Tab. Verz. ii. p. 50. pl. 2. ff. 1, 2 (1790); Esp. Schmett. iv. p. 461, pl. 144. f. 5 (1789); Sepp. Ins. Ned. iv. p. 167, pl. 49; Hübn. Eur. Schmett., Noct. ff. 6, 7; Dup. Lép. Fr. vi. p. 239, pl. 88. f. 1; Steph. Ill. Brit. Ent., Haust. iii. p. 42, pl. 27. f. 1; Staud. Cat. Lep. pal. p. 132.
Acronycta obsoleta, Tutt, Brit. Noct. i. p. 24 (1891).
Acronycta scotica, Tutt, Brit. Noct. i. p. 24 (1891).
Acronycta suffusa, Tutt, Brit. Noct. i. p. 24 (1891).

Head and thorax white mixed with reddish brown; palpi brown except at tips; shoulders and outer edges of patagia with black streaks; abdomen grey-white tinged with brown, the medial segments with diffused dark bands. Fore wing grey-white slightly suffused with brown and irrorated with fuscous; subbasal line represented by double dark striæ from costa and single striga from cell with black streak from it to antemedial line, which is double, oblique, waved, angled inwards on vein 1; orbicular a minute diffused black annulus; reniform defined by a black lunule on inner side and black points and striga on outer; a diffused oblique black bar from costa to reniform and slight incurved brown line from lower angle of cell to inner margin, on which there is a dark mark; postmedial line double filled in with whitish, the outer line strong, black, the inner indistinct except at costa, strongly bent outwards below costa, then minutely dentate, incurved below vein 4, crossed by a short black fascia in submedian fold from just before it to just beyond it, some white points with short black streaks between them beyond it on costa; subterminal line indistinct, diffused, whitish, waved, angled inwards at discal fold and slightly defined by fuscous on outer side; a terminal series of black striæ; cilia chequered brown and white. Hind wing white tinged with brown, especially on basal and terminal areas; the veins streaked with brown; a fine terminal dark line; the underside white slightly tinged with brown, the veins brown, a slight discoidal lunule.

Ab. 1. *obsoleta*. Rather paler.

Ab. 2. *scotica*. Large and bright-coloured, the markings distinct. —W. Scotland.

Ab. 3. *suffusa*. Much darker and suffused with fuscous.

Hab. Britain, Scotland, England, Leech Coll.; Germany, Zeller, Frey, and Leech Colls.; Austria; Hungary; Switzerland; Scandinavia, Lapland; Russia, St. Petersburg, Zeller Coll., Urals; E. Siberia, Amurland. *Exp.* 34–44 millim.

Larva. Meyr. Brit. Lep. p. 144; Barrett, Lep. Brit. iii. p. 255, pl. 121. f. 3. Black-brown or black; subspiracular line dull reddish or crimson, sometimes interrupted, with fascicles of hair varying from pale reddish brown to black; head black. Food-plants: *Myrica*, *Calluna*, *Salix*, &c. 8–9.

3720. Acronycta canadensis. (Plate CXXVI. fig. 10.)

Acronycta canadensis, Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 57 (1898); Dyar, Cat. Lep. N. Am. p. 100.

♀. Head, thorax, and abdomen white mixed with fuscous; sides of palpi and frons blackish. Fore wing white thickly irrorated with fuscous; subbasal line represented by a blackish striga from costa; a slight blackish streak below the cell to near antemedial line, which is fuscous, rather diffused at costa and inner margin, oblique, slightly angled outwards at median nervure, then incurved; orbicular absent; reniform a slight blackish lunule obscured by the rather diffused medial line, which is oblique from costa to lower angle of cell, then incurved, angled outwards at vein 1 and joining the antemedial line at inner margin; postmedial line indistinct and strongly bent outwards below costa, then formed by whitish lunules with blackish lunules on their outer side, incurved below vein 4, bent outwards at vein 1 and with a slight black streak beyond it in submedian fold on some dark suffusion; the terminal area with slight dark streaks on the veins; a terminal series of small black spots with streaks beyond them intersecting the cilia, which are white. Hind wing white slightly suffused and irrorated with brown, the veins brown; a series of small fuscous spots on the termen and base of cilia, which are white; the underside white irrorated with brown, a dark discoidal spot and postmedial line excurved to vein 4, then incurved.

Hab. Canada, Hudson's Bay (*Barnston*), 1 ♀, Quebec, Murray Bay, Alberta, Calgary. *Exp.* 52 millim.

3721. Acronycta cinderella. (Plate CXXVI. fig. 11.)

Acronycta cinderella, Smith, Ent. News Philad. viii. p. 149 (1897); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 64, pl. xi. f. 11; Dyar, Cat. Lep. N. Am. p. 100.

♂. Head and thorax white mixed with fuscous brown; palpi and frons brown at sides; antennæ brown; shoulders with blackish streaks; tarsi blackish ringed with white; abdomen white, dorsally suffused with fuscous, vertically irrorated with brown. Fore wing white irrorated with black-brown, the veins with slight dark streaks, the terminal area slightly darker; a slight sinuous black streak below basal half of cell; subbasal and antemedial lines represented by blackish spots on costa; orbicular defined by black, very small, elongate elliptical; reniform a small diffused blackish lunule with diffused dark mark above it on costa; postmedial line slight, dark, unusually near termen, strongly bent outwards below

costa, then minutely dentate, excurved to vein 4, then incurved and with some dark suffusion beyond it in submedian interspace; subterminal line absent; cilia intersected by black streaks in the interspaces. Hind wing white, the veins slightly tinged with brown, the terminal area very slightly irrorated with brown; a terminal series of black points with slight streaks from them intersecting the cilia; the underside with the costal and terminal areas slightly irrorated with brown, a slight dark discoidal lunule and faint postmedial line with minute dark streaks on the veins.

Hab. U.S.A., Illinois (*Kemp*), 1 ♂, Montana, Miles City, Colorado, Denver, 1 ♂. *Exp.* 32–45 millim.

3722. Acronycta lepusculina. (Plate CXXVI. fig. 12.)

Acronycta lepusculina, Guen. Noct. i. p. 46 (1852); Smith, Cat. Noct. N. Am. p. 39.

Acronycta insita, Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 56, pl. iv. f. 3 & pl. x. f. 8 (nec Wlk.).

Head and thorax white irrorated with fuscous; palpi blackish at sides; abdomen whitish, dorsally tinged with brown, ventrally irrorated with fuscous. Fore wing white irrorated with fuscous, the veins with slight dark streaks; subbasal line represented by a black point on costa; a short diffused dark streak below base of cell; antemedial line represented by a diffused oblique blackish striga from costa; orbicular with very faint dark outline, minute, round; reniform a slight blackish lunule with blackish mark above it on costa; postmedial line strongly bent outwards below costa, then dentate and defined by diffused fuscous on outer side, forming slight lunules above and below vein 5, slightly angled inwards at discal fold, strongly incurved below vein 4 and bent outwards at vein 1, with a slight dark streak beyond it in submedian fold; subterminal line absent; a series of small black spots on termen and base of cilia. Hind wing white slightly irrorated with brown and the veins tinged with brown; a series of small black spots on termen and base of cilia; the underside with blackish discoidal lunule.

Hab. U.S.A., New York (*Doubleday*), 2 ♀, Ithaca, Illinois, Chicago, Urbana, S. Dakota, Volga, New Mexico, Las Vegas (*Cockerell*), 1 ♂. *Exp.* 37–50 millim. Type † in Mus. Paris.

3723. Acronycta chionochroa, n. n. (Plate CXXVI. fig. 13.)

Acronycta lepusculina, Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 63, pl. i. f. 1. & pl xi. f. 8 (nec Guen.).

♂. Head and thorax white slightly mixed with fuscous; sides of palpi except at tips, of frons, and the antennæ black; shoulders and outer edges of patagia with black stripes; tarsi ringed with black; abdomen white with fuscous dorsal bands, the ventral surface irrorated with black. Fore wing white sparsely irrorated with black; a very oblique subbasal black striga from costa; a black streak below base of cell emitting a slight spur from lower side at

middle and forking at extremity; antemedial line represented by a black mark on costa and two slight marks on inner margin; orbicular and reniform very small and slightly defined by black, the former elongate, the latter narrow; a medial black spot on costa and slight mark on inner margin; postmedial line with small black spot on costa, strongly bent outwards and almost obsolete below costa, then represented by small black lunules, produced to slight streaks above vein 7 and at discal fold, incurved below vein 3, angled inwards in submedian fold and crossed by a black streak from well before it to near termen and angled outwards on vein 1; a series of small black spots on termen and base of cilia. Hind wing pure white irrorated with a few black scales on terminal area; a postmedial series of minute black points on the veins; a slight black striga on termen at submedian interspace; the underside with black spot on upper discocellular, and indistinct curved minutely waved postmedial line.

Hab. Canada, Manitoba, Aweme (*Criddle*), 1 ♂; U.S.A., New Hampshire, Manchester, New York, Long I., Florida, S. Dakota, Volga, Iowa, Decorah, 1 ♂, Kansas, Montana, Colorado. *Exp.* 48 millim.

3724. Acronycta populi. (Plate CXXVI. fig. 14.)

Acronycta populi, Riley, 2nd Rept. Ins. Mo p. 119, ff. 87, 88 (1870); Smith & Dyar. Pr. U.S. Nat. Mus. xxi. p. 61, pl. xi. f. 7; Smith, Cat. Noct. N. Am. p. 40.

Head and thorax white mixed with pale brown; palpi at base and sides of frons blackish; antennæ blackish; shoulders with black streaks; tarsi ringed black and white; abdomen white dorsally irrorated with fuscous. Fore wing white, irrorated with fuscous; subbasal line represented by an oblique black striga from costa; a slight sinuous black streak below basal half of cell with some dark suffusion below it at base; antemedial line represented by a diffused oblique black bar from costa and a dark mark on middle of inner margin; orbicular slightly and incompletely defined by black, rather elongate elliptical; reniform an obscure blackish lunule with irregular black bar above it from costa; postmedial line with black point at costa, then very indistinct, strongly bent outwards below costa, slightly angled inwards and with small black spot on it at discal fold and black point below vein 5, strongly incurved and minutely dentate below vein 4, with slight dark lunule below vein 3 and stronger lunule below 2 with short streak beyond it, angled outwards at vein 1; subterminal line absent; cilia intersected by black streaks in the interspaces. Hind wing white, the veins and terminal area very slightly irrorated with brown; a terminal series of black points with faint streaks from them intersecting the cilia; the underside with the costal and terminal areas slightly irrorated with brown, a black discoidal spot and traces of sinuous postmedial line.

Hab. Canada, Ontario, London; U.S.A., Massachusetts, New

York (*Riley*), 1 ♂, 1 ♀, Long Island, Illinois, Chicago (*Reading*), 1 ♂, Nebraska, Missouri, Kansas, Washington, Seattle. *Exp.* 33–47 millim.

Larva. Smith & Dyar, Pr. U.S. Nat. Mus. xxi. pl. vii. f. 25.

Head shining black, body whitish; the hairs long, fine, white, growing from the skin, with black dorsal hair-pencils on joints 5, 7 and 12, with slighter ones on joints 8 to 10. Food-plant: Poplar. —H. G. D.

3725. Acronycta similana. (Plate CXXVI. fig. 15.)

Acronycta similana, Smith, J. N.Y. Ent. Soc. xiii. p. 190 (1905).

♂. Head, thorax, and abdomen dark purplish brown mixed with white; palpi with the 1st joint fringed with white in front; some white round bases of antennæ; shoulders with black stripes: tarsi ringed with white. Fore wing dark purplish brown irrorated with white, the medial area somewhat paler, the veins with slight dark streaks; subbasal line represented by slight black marks below costa and cell; a short black streak in base of submedian fold; antemedial line black defined by white on outer side, oblique, sinuous; orbicular and reniform represented by small diffused blackish marks; two slight dark marks on medial part of costa; postmedial line blackish defined on inner side by lunulate black marks, bent outwards below costa, then dentate, excurved to vein 4, then incurved and angled outwards on vein 1, a blackish patch beyond it in submedian interspace with slight dark streaks from it to termen; subterminal line absent; a series of blackish spots on termen and cilia, which are whitish. Hind wing whitish tinged with brown, the veins brown, the terminal area suffused with brown; a small black discoidal spot; cilia brown at base, white at tips: the underside white, the costal and terminal areas broadly suffused with brown irrorated with white.

Hab. U.S.A., Illinois, Chicago, 1 ♂. *Exp.* 40 millim.

3726. Acronycta gastridia. (Plate CXXVI. fig. 16.)

Acronycta aceris, Hmpsn. Moths Ind. ii. p. 241 (nec Linn.).
Acronycta gastridia, Swinh. A. M. N. H. (6) xv. p. 5 (1895); Hmpsn. Moths Ind. iv. p. 510.

Head and thorax white mixed with black; 2nd joint of palpi with black band; shoulders and outer edges of patagia with black streaks; tarsi banded with black; abdomen whitish suffused with brown, the basal crest black and white. Fore wing white thickly irrorated with black and tinged in parts with brown, some fuscous suffusion on inner half beyond the antemedial line and on outer edge of postmedial line; subbasal line double, waved, from costa to vein 1, with black streak in submedian fold from it to antemedial line, which is strong, double, waved, oblique; orbicular defined by black, small, round; reniform defined by black on inner side and by black points on outer, its inner side suffused with black; a diffused oblique black bar from costa to reniform and slight incurved line from lower angle of cell to inner

margin; postmedial line double filled in with white, bent outwards below costa, then dentate, incurved below vein 3 and angled outwards at vein 1, some black points beyond it on costa; subterminal line ill-defined, whitish and with slight blackish marks on its outer edge, excurved below costa and at middle; a terminal series of slight black lunules; cilia chequered brown and white and with slight black line through them. Hind wing whitish suffused with pale red-brown, an indistinct curved whitish postmedial line; cilia chequered white and pale brown; the underside white irrorated with pale brown, a dark discoidal spot and brownish mark on middle of costa, postmedial line excurved from costa to vein 5, then incurved.

Hab. Kashmir, Gourais Valley (*Leech*), 1 ♂, Scinde Valley (*Leech*), 3 ♂, 1 ♀, Dras (*Leech*), 1 ♂, 1 ♀, Kokser (*McArthur*), 2 ♀, Rala (*McArthur*), 1 ♀; Punjab, Murree (*Manders*), 1 ♀ type. *Exp.* 36–46 millim.

3727. Acronycta metaxantha, n. sp. (Plate CXXVI. fig. 17.)

♂. Head and thorax grey-white mixed with dark brown; 2nd joint of palpi with black band; tegulæ and patagia slightly edged with blackish; tarsi black ringed with white; abdomen ochreous suffused with rufous, the basal crest greyish, the ventral surface paler. Fore wing greyish suffused with brown and thickly irrorated with dark brown; subbasal line represented by double black striæ from costa and single striga from cell with somewhat curved black streak from it to antemedial line, which is double, oblique, waved, angled inwards on median nervure and vein 1; the medial area with diffused blackish fascia above vein 1; orbicular and reniform defined by black, the former round with slight brown centre, the latter suffused with brown, a dark shade from costa to reniform and indistinct oblique minutely dentate line from lower angle of cell to inner margin angled outwards on vein 1; postmedial line double, filled in with whitish and with whitish lunule on it below submedian fold, strongly bent outwards below costa, then dentate, strongly incurved below vein 3 and angled outwards on vein 1, some whitish points beyond it on costa and a dark shade from it to termen below vein 3; an indistinct greyish subterminal line slightly defined by brown on outer side, excurved below vein 7 and at middle and angled inwards at discal and submedian folds; a terminal series of slight black lunules; cilia blackish at base, chequered black and white at tips. Hind wing orange-yellow, the disk rather paler, the terminal area suffused with brown from apex to vein 2 and with brownish spot at vein 1; cilia yellowish white with slight brown marks from apex to vein 2; the underside yellowish white slightly tinged with brown, the costal and terminal areas irrorated with brown, a slight discoidal lunule with brownish bar from costa above it, and traces of a diffused lunulate postmedial line incurved below vein 3.

♀. Hind wing with the terminal band broader and more complete towards tornus.

Ab. 1 ♀. Hind wing more suffused with brown, the terminal band entire, leaving a yellow patch on termen in submedian interspace.

Ab. 2 ♀. Hind wing whitish, tinged with yellow and suffused with brown.

Hab. W. China, Chang-yang (*Pratt*), 2 ♀, Washan (*Pratt*), 1 ♀, Chia-kou-ho (*Pratt*), 1 ♂, 2 ♀ type, Ta-chien-lu (*Pratt*), 1 ♀. *Exp.* 48–56 millim.

3728. **Acronycta nigricans.** (Plate CXXVI. fig. 18.)

Acronycta nigricans, Leech, Trans. Ent. Soc. 1900, p. 104.

♀. Head and thorax black, mixed with some brown and white; palpi yellowish white at base and extremity of 2nd joint, tarsi ringed with white; abdomen ochreous white dorsally suffused with brown. Fore wing grey, thickly irrorated with black-brown, the inner half and terminal area suffused with black; subbasal line represented by double black striæ from costa and single striga from cell with black streak from it to beyond antemedial line, which is double, waved, oblique, angled inwards on vein 1; orbicular and reniform defined by black, the former round with slight dark centre, a diffused oblique dark shade from costa to lower angle of cell through the reniform and traces of an incurved line from cell to inner margin; postmedial line double, with white lunule on it below submedian fold, the inner line indistinct, bent outwards below costa, then dentate, incurved below vein 3 and angled outwards on vein 1, some white points beyond it on costa; a dentate whitish subterminal line defined by black on outer side; a terminal series of black points; cilia with a fine whitish line at base. Hind wing pure white; the veins towards tornus slightly streaked with brown; the apex tinged with brown; a terminal series of blackish points except towards tornus; the underside with the costal area irrorated with brown and with slight dark patch at middle, a slight discoidal point and traces of postmedial line from costa to vein 6.

Hab. W. China, Washan (*Pratt*), 5 ♀ type. *Exp.* 44–50 millim.

3729. **Acronycta emaculata.** (Plate CXXVI. fig. 19.)

Acronycta emaculata, Smith, Ent. News Philad. viii. p. 152 (1897); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 158, pl. xiii. f. 2; Dyar, Cat. Lep. N. Am. p. 104.

Head and thorax bluish white mixed with black; 2nd joint of palpi with black band; shoulders and outer edges of patagia with black streaks; tarsi banded with black; abdomen white slightly irrorated with black and dorsally suffused with red-brown except at extremity. Fore wing bluish grey thickly irrorated with black and in parts suffused with black, especially beyond the postmedial line; subbasal line represented by double black striæ from costa; a slight black streak in submedian fold from base to the antemedial

line defined by white above and with black suffusion below it; antemedial line strong, double, oblique, waved, angled inwards on median nervure and vein 1, with blackish patch beyond it above vein 1; orbicular and reniform defined by black, the former with black point in centre, round, the latter with its centre suffused with fuscous, open above and with the black on outer edge reduced to points. A black striga from costa to reniform; postmedial line double, filled in with whitish, the outer line strong, bent outwards below costa, then dentate, incurved below vein 4, some white points with short black streaks between them beyond it on costa; the veins of terminal area streaked with black; subterminal line represented by a series of white spots in the interspaces, slightly angled outwards at vein 7, excurved at middle, then incurved; a terminal series of black points; cilia chequered black and white at tips. Hind wing white; a slight discoidal spot; the veins of terminal half streaked with brown and the terminal area irrorated with brown, in female wholly tinged with brown; the underside with the costal and terminal areas slightly irrorated with brown, a small dark discoidal spot.

Hab. Canada, Manitoba, Aweme (*Criddle*), 1 ♀, Alberta, Calgary (*Wolley-Dod*), 9 ♂, 4 ♀, Br. Columbia, Sicamous Junct. (*Miss Ricardo*), 1 ♀; U.S.A., Washington, Easton. *Exp.* 38–40 millim.

3730. **Acronycta impressa.** (Plate CXXVI. fig. 20.)

Acronycta impressa, Wlk. ix. p. 61 (1856); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 159, pl. i. f. 12 & pl. xiii. ff. 4, 5; Smith, Cat. Noct. N. Am. p. 41.
Acronycta fasciata, Wlk. ix. 62 (1856).
Acronycta verrillii, Grote & Rob. Trans. Am. Ent. Soc. iii. p. 178, pl. ii. f. 82 (1870).

Head and thorax grey mixed with brown and black; 2nd joint of palpi with black band; shoulders and outer edges of patagia with black stripes; tarsi banded with black; abdomen grey tinged with brown and irrorated with fuscous. Fore wing grey tinged with brown and irrorated with fuscous, the inner area suffused with brown to antemedial, medial or postmedial lines leaving some ochreous white on base of inner margin; subbasal line represented by double black striæ from costa and single striga from cell; antemedial line double, waved, nearly erect; orbicular and reniform defined by black, the former round, the latter suffused with brown; medial line oblique from costa to reniform, inwardly oblique and dentate from lower angle of cell to inner margin; postmedial line double filled in with whitish, the inner line indistinct, bent outwards below costa, then dentate, strongly incurved below vein 3 and angled outwards on vein 1, some brown suffusion beyond it and a large patch between veins 3 and 1 and some whitish points on costa; the veins of terminal area with dark streaks; a whitish subterminal line defined on outer side by small dentate black marks; a series of small black spots on termen and base of cilia,

which are whitish with slight black lunules at tip. Hind wing whitish, uniformly suffused with reddish brown: cilia white with a series of brown marks at base; the underside white irrorated with brown, traces of a curved postmedial line and diffused subterminal band.

Hab. Canada, Hudson's Bay (*Barnston*), 3 ♀ type and type *fasciata*, Ottawa (*Fletcher, Saunders*), 1 ♂, 4 ♀; Manitoba, Cartwright (*Heath*), 3 ♂, 1 ♀; U.S.A., Massachusetts, Cambridge (*Verrill*), 1 ♂ type *verrillii*, New York Garrison (*Cockerell*), 2 ♂, New Jersey, Distr. of Columbia, Washington, Illinois, Minnesota, Colorado, Glenwood Springs. *Exp.* 36–38 millim.

Larva. Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 160, pl. viii. ff. 33, 34.

Head shining black. Body black; warts large, the hairs in dense short tufts, pale yellow, leaving a rather broad bare dorsal space. Food-plant: Willow.—H. G. D.

3731. **Acronycta distans.** (Plate CXXVI. fig. 21.)

Apatela distans, Grote, Can. Ent. xi. p. 58 (1879); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 161, pl xiii. ff. 6, 7; Smith, Cat. Noct. N. Am. p. 42.
Apatela dolorosa, Dyar, Can. Ent. xxxvi. p. 29 (1904).

Head and thorax grey-white mixed with brown and black; 2nd joint of palpi with black band; shoulders and outer edges of patagia streaked with black; the tarsi banded black and white; abdomen whitish suffused with red-brown, the dorsal crest dark brown. Fore wing grey-white thickly irrorated with dark brown, the inner area suffused with dark brown to medial line leaving some whitish at base of inner margin; subbasal line represented by double black striæ from costa and single striga from cell with slight black streak beyond it in submedian fold defined by whitish above; antemedial line double filled in with grey, waved, nearly erect, the medial area with whitish streak in submedian fold; orbicular and reniform defined by black, the former round with dark point in centre, the latter suffused with brown and with the black on outer edge reduced to points; an obique dark bar from costa to reniform and indistinct oblique dentate line from lower angle of cell to inner margin; postmedial line black, defined by whitish on inner side, bent outwards below costa, then rather strongly dentate, strongly incurved below vein 3 and angled outwards on vein 1, some whitish points with slight dark streaks between them beyond it on costa, the postmedial area suffused with brown; an indistinct whitish subterminal line with slight blackish marks on its outer edge, incurved in submedian interspace; a series of small black spots on termen and base of cilia which have black striæ at tips. Hind wing white, the base slightly tinged with yellowish, the veins and terminal area to vein 2 with brown; the underside with the costal area slightly irrorated with brown, a small blackish discoidal spot.

Ab. 1. *dolorosa*. Darker.—Br. Columbia.

Hab. Canada, Ottawa (*Fletcher*), 1 ♂, Montreal (*Caulfield*), 1 ♂,

1 ♀ type, Manitoba, Aweme (*Criddle*), 2 ♂, Br. Columbia, Kaslo; U.S.A., New York, 1 ♂, 2 ♀. *Exp.* 38–44 millim.

Larva. Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 162.

Head black, shining. Body black, reddish subventrally; warts large, the hairs in dense tufts, red on joints 2–5 and 12–13, pale yellow on the other segments. Food-plants: Willow, &c.—H. G. D.

Ab. *dolorosa.* Same as *A. distans*, the amount of red hair variable, sometimes all the hairs red.—H. G. D.

3732. Acronycta edolata. (Plate CXXVI. fig. 22.)

Apatela edolata, Grote, Papilio, i. p. 153 (1881); id. Ill. Essay, 1882, p. 49, pl. i. f. 4; Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 164, pl. iv. f. 1; Smith, Cat. Noct. N. Am. p. 45.

♂. Head and thorax brownish white mixed with dark brown; palpi whitish with black band on 2nd joint; patagia broadly edged with dark brown; tegulæ and thorax with paired dark brown stripes; tibiæ streaked with black; abdomen grey irrorated with fuscous and dorsally tinged with brown. Fore wing purplish grey mostly suffused with black-brown, some whitish at base of inner margin, the veins with pale streaks to postmedial line; subbasal line represented by two very oblique black striæ from costa; a slight black streak in submedian fold from base to antemedial line, which is indistinct, double filled in with greyish, oblique, angled outwards below costa, in submedian fold and above inner margin; orbicular indistinctly defined by black, small, rather elongate elliptical; reniform absent; postmedial line black defined by grey on inner side, bent outwards below costa, then strongly dentate, angled inwards in discal fold and strongly in submedian fold, then outwards on vein 1, some white points beyond it on costa; faint traces of an irregular whitish subterminal line, the area beyond it pale grey with strong black streaks in the interspaces intersecting the cilia. Hind wing pure white, the base, veins, costa, and apical part of termen slightly tinged with brown; the underside with the costal area irrorated with brown, a slight dark mark on costa beyond middle.

Hab. U.S.A., Arizona (*Prescott*), 2 ♂ type. *Exp.* 44–46 millim.

3733. Acronycta lithospila. (Plate CXXVI. fig. 23.)

Acronycta lithospila, Grote, Proc. Bost. Soc. N. H. xvi. p. 240 (1874); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 98, pl. i. f. 13; Smith, Cat. Noct. N. Am. p. 45.

Head and thorax brown mixed with white; palpi white at base and with red-brown band on 2nd joint; basal joint of antennæ white in front; the back of head with white streaks above eyes; tegulæ with blackish medial streak; prothorax with rufous patch; tarsi fuscous slightly ringed with white; abdomen grey irrorated with brown and suffused with reddish brown at base, the ventral

surface white. Fore wing grey-white, the costal half suffused with brown, the inner half irrorated with brown, the median nervure and vein 1 defined by slight black streaks on each side on medial area and the veins of terminal area with slight dark streaks; subbasal line represented by a very oblique black striga from costa with slight black streak beyond it on subcostal nervure; a fine black streak in submedian fold from base to the antemedial line, which is represented by very oblique black streaks from costa, in cell and above inner margin and traces of a line from cell to vein 1; orbicular represented by two black points, with a slight whitish streak in discal fold from it to the reniform, which is defined by slight black points; a slight very oblique medial black streak from costa; postmedial line obsolescent, double towards costa, strongly bent outwards below costa, then dentate, excurved to vein 3, then angled inwards in submedian fold and outwards on vein 1, crossed by a black streak in submedian fold from well before it to termen; the interspaces of terminal area with short black streaks. Hind wing semihyaline white faintly tinged with reddish brown especially on the veins and apical area; the underside with the costal area slightly tinged with red-brown, traces of a discoidal point and curved postmedial line.

Hab. Canada; U.S.A., Massachusetts, New York, Evans Center (*Grote*), 3 ♂, 1 ♀ type, Mississippi, Florida, Oregon, Portland, Colorado, Pacific Coast. *Exp.* 42 millim.

Larva. Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 99.

Head with the vertex dotted with black on a red ground, pale on the face. Body green on the sides, a dorsal red-brown (or white) band that widens on joints 6–10, narrowly yellow-edged; hairs sparse, fine, longer on joint 2. Food-plants: Chestnut, Oak, &c.—H. G. D.

3734. Acronycta barnesi. (Plate CXXVI. fig. 24.)

Acronycta barnesii, Smith, Ent. News Philad. viii. p. 153 (1897); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 162, pl. xiii. f. 10; Dyar, Cat. Lep. N. Am. p. 104.

♂. Head and thorax grey-white largely mixed with black-brown; 2nd joint of palpi with black band; tegulæ with brown patch at tips; patagia broadly edged with black; thorax with paired black stripes; the tarsi banded black and white; abdomen grey mixed with dark brown and dorsally suffused with brown. Fore wing grey-white thickly irrorated with black-brown; a diffused black-brown fascia above vein 1 to medial line and a slight streak above inner margin from near base; subbasal line absent; antemedial line very indistinct, double, oblique, angled outwards below costa and inwards below median nervure; orbicular and reniform absent; medial line formed by a curved series of small elongate dark marks; postmedial line very indistinct, bent outwards below costa, then dentate, oblique below vein 4 and with slight brown suffusion beyond it, with dark streaks from it to

termen in discal and submedian folds; a series of small blackish spots just before termen; cilia chequered whitish and black-brown. Hind wing white, the base slightly tinged with yellowish, the apical part of termen slightly irrorated with brown; the cilia with series of dark points from apex to vein 2; the underside with the costal area slightly irrorated with brown, a small blackish discoidal spot.

Hab. U.S.A., Colorado, Glenwood Springs (*Barnes*), 2 ♂. *Exp.* 44 millim.

3735. Acronycta perdita. (Plate CXXVI. fig. 25.)

Acronycta perdita, Grote, Can. Ent. vi. p. 154 (1874); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 163, pl. iii. f. 6; Smith, Cat. Noct. N. Am. p. 42.

Head and thorax purplish grey mixed with black; the tegulæ and thorax with paired blackish stripes; tarsi black ringed with white; abdomen grey thickly irrorated with dark brown, the base suffused with brown. Fore wing purplish grey thickly irrorated with black, the submedian interspace suffused with blackish to medial line; subbasal line represented by double black striæ from costa; antemedial line double, strong, very oblique towards costa, then waved; orbicular and reniform defined by black, the former small, elongate elliptical, the latter filled in with brown and with the black on its outer edge reduced to spots; medial line oblique and diffused from costa to reniform, indistinct, inwardly oblique and somewhat dentate from lower angle of cell to inner margin; postmedial line black defined by grey on inner side, strongly bent outwards below costa, then dentate, excurved to vein 4, then incurved and angled outwards on vein 1, some dark suffusion beyond it and a dark patch between veins 6 and 4 and fascia below vein 2 extending to near termen; a series of small black spots just before termen; cilia chequered grey and black-brown. Hind wing white, the veins and costal area tinged with brown in male, in female suffused with brown, the terminal area darker; cilia white; the underside white irrorated with brown, a brownish discoidal spot and traces of curved postmedial line.

Hab. Canada, Br. Columbia, Peachland; U.S.A., Washington, Easton, California (*Behrens*, *D'Urban*), 1 ♂, 3 ♀ type, Sierra Nevada. *Exp.* 42–50 millim.

Larva. Head shining black. Body black, the warts large; the hairs in dense tufts, spinose, black, intermixed with a few pale ones. Food-plants: Alder, &c.—H. G. D.

3736. Acronycta extricata. (Plate CXXVI. fig. 26.)

Mastiphanes extricata, Grote, Bull. U.S. Geol. Geog. Surv. Terr. vi. p. 575 (1882); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 165, pl. xiii. f. 9; Smith, Cat. Noct. N. Am. p. 45.

Head and thorax bluish white mixed with black-brown; 2nd joint of palpi with black band; lower part of frons black; antennæ

with the basal joint white in front; patagia edged with black; tegulæ and thorax with paired black stripes; tibiæ streaked with black, the tarsi banded with black; abdomen pale grey irrorated with brown, the ventral surface white. Fore wing white thickly irrorated with dark brown; subbasal line represented by a very oblique black striga from costa; a black streak in submedian fold from base to the antemedial line, which is very indistinct, double, with oblique dark bar from costa, then strongly angled outwards in the interspaces and inwards on the veins; orbicular very small, round, whitish defined by black; reniform represented by small dark spots at angles of cell, with a minute streak beyond upper angle and two beyond lower angle; a rather diffused curved medial line; postmedial line with two very oblique dark streaks on costal area, then black defined by white on inner side, strongly dentate, excurved to vein 4, then incurved, crossed by a black streak in submedian fold from medial line to termen and with some whitish points beyond it on costa; the interspaces of terminal area with black streaks, those above and below veins 5 and 2 extending to postmedial line, the streaks intersecting the cilia. Hind wing semihyaline white, the apex slightly tinged with brown; the underside with the costal area slightly irrorated with brown.

Hab. U.S.A., Texas, 2 ♂, 1 ♀ type. *Exp.* ♂ 42, ♀ 52 millim.

3737. Acronycta digna.

Thalpophila digna, Butl. Trans. Ent. Soc. 1881, p. 176; Staud. Cat. Lep. pal. p. 133.
Acronycta michael, Oberth. Ét. Ent. x. p. 18, pl. ii. f. 13 (1884).

♂. Head and thorax whitish mixed with red-brown, the patagia and metathorax with white patches; 2nd joint of palpi with blackish patch; shoulders and outer edges of patagia with brown streaks; tarsi brown ringed with white; abdomen whitish suffused with red-brown. Fore wing grey-white irrorated and in parts suffused with red-brown, the antemedial costal area whiter; subbasal line represented by double brown striæ from costa and single striga from cell with blackish streak from it to antemedial line, which is double, brown, angled outwards below costa and inwards in submedian fold, then oblique, sinuous; orbicular and reniform defined by brown, the former small, round, with brown point in centre, the latter with brownish lunule on inner side of centre and its lower extremity produced; a diffused brown striga from costa to reniform and incurved line from lower angle of cell to inner margin with short blackish streak before it above vein 1; postmedial line double filled in with white, the inner line rather indistinct, strongly bent outwards below costa, then incurved, angled outwards on veins 4, 3, then strongly incurved and bent outwards at vein 1, crossed by a minute dark streak in submedian fold and with some white points beyond it on costa; the terminal area somewhat more suffused with brown with a rather diffused white subterminal line angled outwards at vein 7 and inwards at

discal fold, excurved at middle, then incurved and with white streak in submedian fold from it to just before termen; a terminal series of small brown lunules; cilia red-brown intersected with white. Hind wing white slightly tinged with brownish yellow at base and on inner area; the terminal area suffused with red-brown from apex to below vein 2; a terminal series of slight brown striæ from apex to vein 2; cilia white with faint brown spots on apical half; the underside with the costal area irrorated with brown, a slight brown discoidal spot, indistinct sinuous postmedial line and diffused subterminal band from costa to vein 2.

♀. Hind wing strongly tinged with brownish yellow, the terminal band extending to tornus leaving a yellowish patch on termen in submedian interspace.

Hab. E. Siberia, Ussuri; Japan, Oiwake (*Pryer*), 1 ♀, Yokohama (*Pryer*), 3 ♂, 1 ♀ type; Corea, Gensan (*Ito*), 2 ♀. *Exp.* 42–52 millim.

3738. Acronycta raphaelis.

Acronycta raphael, Oberth. Ét. Ent. x. p. 19, pl. 2. f. 9 (1884); Staud. Cat. Lep. pal. p. 133.
Acronycta fixseni, Græs. Berl. ent. Zeit. 1888, p. 311.

♂. Head and thorax reddish brown mixed with whitish; palpi with the 2nd joint blackish; outer edges of patagia with blackish streak; tarsi blackish with pale rings; abdomen whitish suffused with red-brown, the basal crest black. Fore wing violaceous grey thickly irrorated and suffused with dark red-brown, the basal, costal, and inner areas pale; subbasal line represented by slight double dark striæ from costa; a diffused blackish streak in submedian fold from near base to antemedial line which is almost medial, double, oblique, nearly straight; orbicular and reniform rather indistinctly defined by dark brown, the former round with brown centre, the latter suffused with brown; a diffused dark bar from costa to reniform and oblique line from lower angle of cell to inner margin at antemedial line; postmedial line double, filled in with whitish, bent outwards below costa, then incurved, excurved at vein 4, then strongly incurved and rather oblique to inner margin, some whitish points beyond it on costa; subterminal line indistinct, grey, defined on inner side by an oblique dark bar from costa and on outer by slight dark spots, somewhat excurved below vein 7 and at middle, then incurved; cilia chequered dark red-brown and white. Hind wing white slightly suffused with red-brown, the terminal area somewhat darker; an indistinct discoidal spot and postmedial line incurved below vein 4; cilia white with series of brownish spots at base; the underside white tinged with red-brown, the costal and terminal areas irrorated with red-brown, a dark bar from costa to discoidal spot and rather diffused postmedial line incurved below vein 4.

Hab. E. Siberia, Amurland, 1 ♂, Ussuri. *Exp.* 36 millim.

3739. Acronycta rubricoma. (Plate CXXVI. fig. 27.)

Acronycta rubricoma, Guen. Noct. i. p. 49 (1852); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 42, pl. 1. f. 4; Smith, Cat. Noct. N. Am. p. 42.

Head and thorax grey-white mixed with fuscous brown; palpi with brown mark on 2nd joint at side; antennæ with the basal joint white in front; tegulæ with fuscous tips; tarsi banded with fuscous; abdomen whitish, the basal half dorsally suffused with reddish ochreous, the terminal half with brown. Fore wing white thickly irrorated with pale reddish brown, the veins with slight dark streaks; subbasal line represented by double black striæ from costa and a single striga from cell; antemedial line double, black, filled in with white, oblique, dentate, the outer line angled outwards below costa, the inner inwards below the cell, angled inwards on vein 1 and bent inwards along inner margin to near base; orbicular and reniform strongly defined by black, large, the former round, the latter with diffused fuscous in centre and oblique black striga above it from costa; postmedial line double filled in with white, bent outwards below costa, then dentate, excurved to vein 4, then incurved, with faint diffused streak before and beyond it in discal fold, some dark suffusion beyond it in submedian interspace and some white points with slight dark streaks between them on costa; a terminal series of small black lunules; cilia chequered white and fuscous. Hind wing white tinged with reddish ochreous towards base, the veins dark; an indistinct curved postmedial line and faint diffused subterminal band; a terminal series of slight dark striæ; cilia white with a faint dark line through them; the underside white, the costal area and veins slightly irrorated with brown, an indistinct discoidal spot and crenulate postmedial line with dark streaks on the veins.

Hab. Canada; U.S.A., New York, Long Island, Pennsylvania, Philadelphia, 1 ♂, 1 ♀, Distr. of Columbia, Washington, Missouri, St. Louis, Texas, Dallas (*Boll*), 1 ♀. *Exp.* 44–50 millim.

Larva. Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 43, pl. vi. ff. 14, 15.

Head rounded, shining black or red, a white V-mark above mouth. Body cylindrical, yellowish, with a broad, partly geminate black dorsal band, containing pencils of white hair on joints 6 to 10 and 12. Other hair growing from the skin, dense, fine, white. Food-plant: Hackberry (*Celtis occidentalis*).—H. G. D.

3740. Acronycta centralis. (Plate CXXVI. fig. 28.)

Acronycta centralis, Ersch. Fedch. Reise, p. 37, pl. 3. f. 35 (1874); Staud. Cat. Lep. pal. p. 131.

♂. Head, thorax, and abdomen grey-white mixed with fuscous; tarsi ringed with fuscous. Fore wing grey-white thickly irrorated with fuscous, the postmedial area rather darker; subbasal line absent; antemedial line indistinct, double, oblique, waved; orbicular and reniform faintly defined by fuscous, the former moderate, round; traces of a medial dark line towards costa; postmedial line

fuscous, bent outwards below costa, then indistinctly double, dentate, strongly incurved below vein 4, crossed by a fuscous streak in submedian fold extending to termen, some pale points beyond it on costa; subterminal line only defined by the contrast between the postmedial and terminal areas, angled outwards at vein 7 and excurved at middle; a terminal series of black striæ. Hind wing white, the veins of terminal half tinged with brown, the termen slightly irrorated with brown; a dark terminal line; cilia chequered brownish and white; the underside silvery white, the costal area slightly irrorated with brown, the veins of terminal half tinged with brown, a dark terminal line.

Ab. 1. Fore wing with the lines more distinctly double, the postmedial line filled in with whitish and without the dark streak crossing it.—Persia.

Hab. N.W. Persia, Urumiah (*Daltry*), 1 ♂; W. Turkestan, Turcomania, 1 ♂, Ferghana, Sarawschan. *Exp.* 42 millim.

3741. Acronycta megacephala.

Noctua megacephala, Schiff. Wien. Verz. p. 67 (1776); Fabr. Mant. Ins. ii. p. 175 (1787); Esp. Schmett. iv. pl. 144. ff. 1–4; Hübn. Eur. Schmett., Noct. ff. 10, 11; Dup. Lép. Fr. vi. p. 244, pl. 88. f. 6; Steph. Ill. Brit. Ent., Haust. iii. p. 37; Staud. Cat. Lep. pal. p. 131.
Acronycta grumi, Alph. Rom. Mém. ix. p. 3 (1897).
Acronycta pulla, Strand, Arch. Naturv. Christian. xxv. no. 9, p. 9 (1903).

♂. Head and thorax fuscous brown mixed with grey-white; 2nd joint of palpi with black band; shoulders and outer edges of patagia with black streaks; tarsi banded black and white; abdomen whitish suffused with brown and irrorated with black at extremity. Fore wing whitish almost entirely suffused and irrorated with black-brown; subbasal line indistinct, double, waved, from costa to submedian fold; antemedial line double filled in with greyish, oblique, waved; orbicular whitish defined by black and with slight dark centre, round; reniform slight defined by black on inner side, undefined on outer and with slight dark lunule in centre; an oblique dark striga from costa to reniform and traces of a waved line from cell to inner margin; postmedial line double filled in with whitish, bent outwards below costa, then minutely dentate, incurved below vein 3, some white points beyond it on costa; the veins of terminal area with slight dark streaks; an indistinct pale lunulate subterminal line extending to the terminal series of blackish points; cilia white with a series of black points. Hind wing pure white, the veins of terminal area streaked with brown; a faint subterminal band of dark irroration and a fuscous mark in submedian fold; a terminal series of dark striæ; cilia intersected by slight dark streaks; the underside with the costal area slightly tinged and irrorated with brown, a blackish discoidal spot, postmedial series of minute dark streaks on the veins and terminal series of small lunules.

♀. Hind wing more suffused with brown.

Ab. 1. *pulla*. Head, thorax, abdomen, and fore wing suffused with fuscous, leaving the orbicular annulus white.

Ab. 2. *grumi*. Fore wing narrower, the antemedial area whiter; hind wing wholly white.—Thian-Shán Mts.

Hab. Britain, Leech Coll.; France, Sand Coll.; Denmark, Leech Coll.; Germany, Zeller and Leech Colls.; Austria; Hungary; Switzerland, Frey Coll.; Spain; Italy; Scandinavia; Russia, Livonia, Zeller Coll.; Armenia; Asia Minor, Bithynia; Persia; W. Siberia; Mongolia, Thian-Shán Mts.; E. Siberia, Amurland. *Exp.* 40–46 millim.

Larva. Meyr. Brit. Lep. p. 142; Barrett, Lep. Brit. iii. p. 234, pl. 120. f. 3.

Dark fuscous or grey above, paler at sides; numerous pale yellowish pubescent points forming ill-defined lines; 10th somite with a pale yellow or white dorsal patch; numerous pale or white hairs; head black marked with white. Food-plants: Poplar or rarely *Salix*. 7–9.

3742. Acronycta tiena. (Plate CXXVI. fig. 29.)

Acronycta tiena, Püng. Iris, xix. p. 216, pl. 8. f. 10 (1906).

Head and thorax grey mixed with brown and fuscous; palpi with the 2nd joint blackish at sides; tarsi blackish ringed with white; abdomen white suffused with brown, leaving white segmental bands and the base white. Fore wing grey-white thickly irrorated and suffused with blackish; subbasal line indistinct, double, blackish, from costa to submedian fold; antemedial line indistinct, double, oblique, angled outwards below costa, inwards on vein 1 and excurved in submedian interspace and above inner margin; orbicular defined by blackish, small, round; reniform very indistinctly defined, with dark lunule on inner side of centre; an oblique blackish shade from costa to reniform; postmedial line double with white lunules on it above and below vein 1; bent outwards below costa, then minutely dentate, excurved to vein 4, then strongly incurved, some pale points beyond it on costa; subterminal line represented by a series of dark spots in the interspaces; a terminal series of black striæ; cilia chequered grey and fuscous. Hind wing pure white with slight brown terminal line from apex to vein 2; the underside with the costal area irrorated with a few brown scales, a small dark discoidal spot.

Hab. E. Turkestan, Ili in Coll. Püngeler, Alexander Mts.; W. China, Moupin (*Kricheldorf*), 2 ♂. *Exp.* 46 millim.

3743. Acronycta bicolor. (Plate CXXVI. fig. 30.)

Acronycta bicolor, Moore, P. Z. S. 1881, p. 332; Hmpsn. Moths Ind. ii. p. 243.

Head and thorax black, with a few white scales; tarsi ringed with whitish; abdomen grey suffused with brown. Fore wing black-brown slightly irrorated with grey; subbasal line represented by indistinct double black striæ from costa and single striga from

cell; antemedial line indistinct, double, oblique, waved; orbicular and reniform faintly defined by black, the former round; traces of a waved medial line incurved below the cell; postmedial line indistinct, double, with whitish lunule on it below submedian fold, bent outwards below costa, then waved, incurved below vein 3 and angled outwards on vein 1, some minute whitish points beyond it on costa; an indistinct subterminal series of dark marks in the interspaces; a terminal series of black points with blackish marks beyond them on the cilia. Hind wing pure white; the veins tinged with brown; cilia white mixed with brown and with series of small dark spots; the underside with the costal area irrorated with brown, a slight discoidal spot.

Hab. Punjab, Kulu, Sultanpur (*G. Young*), 1 ♂, Simla (*Read, Harford*), 3 ♂, 1 ♀ type, Dharmsála (*Hocking*), 6 ♀. *Exp.* 44–54 millim.

3744. Acronycta betulæ. (Plate CXXVI. fig. 31.)

Acronycta betulæ, Riley, Bull. Brooklyn Ent. Soc. vii. p. 2, f. 1 (1884); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 75, pl. ii. f. 19; Smith, Cat. Noct. N. Am. p. 37.

♂. Head, thorax, and abdomen ochreous white; palpi with brown band on 2nd joint; abdomen dorsally suffused with fulvous yellow except at base. Fore wing ochreous white sparsely irrorated with dark scales; subbasal line represented by a faint dark point on costa; antemedial line indistinct, dark, oblique, waved; orbicular and reniform ochreous faintly defined by rufous, the former moderate, round; postmedial line rufous defined by whitish on inner side and with some ochreous suffusion on outer, bent outwards below costa, incurved at discal fold, dentate at veins 4, 3, then strongly angled inwards in submedian fold and outwards on vein 1; traces of a waved subterminal line from costa to vein 6. Hind wing whitish suffused with reddish ochreous especially on inner area; a slight dark discoidal point and traces of a diffused curved postmedial band; the underside ochreous white, a slight dark spot at middle of cell and discoidal spot, traces of a curved postmedial line with dark spots at discal and submedian folds, a terminal series of dark points.

Hab. U.S.A., New Hampshire, Jefferson, New York, Long Island, Distr. of Columbia, Washington, 1 ♂, Pennsylvania, Missouri. *Exp.* 42 millim.

Larva. Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 76, pl. v. ff. 4, 5.

Head mottled with black below, red on the vertices of lobes; body flattened, with a fringe of hairs along the subventral edge, brown, the dorsal tubercles dark, the lateral ones pale; hairs short, sparse, growing from the skin. Food-plant: Birch.—H. G. D.

3745. Acronycta americana. (Plate CXXVI. fig. 32.)

Phalæna aceris, Smith & Abbot, Ins. Georgia, ii. p. 185, pl. 93 (1797), nec Linn.

Apatela americana, Harris, Rept. Ins. Mass. p. 317 (1841); id. Ins. Inj.

Veg.; Flint ed. p. 436, ff. 216–218; Smith, Pr. U.S. Nat. Mus. xxi. p. 44, pl. i. f. 2; Smith, Cat. Noct. N. Am. p. 40.

Acronycta acericola, Guen. Noct. i. p. 48 (1852); Smith, Cat. Noct. N. Am. p. 41.

Apatela obscura, H. Edw. Ent. Am. ii. p. 169 (1886).

Head and thorax grey-white mixed with fuscous brown; 2nd joint of palpi and frons with black patches at sides; shoulders with black streaks; abdomen grey-white irrorated with brown, the ventral surface white with slight brown sublateral streaks. Fore wing grey-white irrorated with brown; a small blackish spot at base; subbasal line represented by a black striga from costa; antemedial line double, oblique, the lines widely separated, irregular, the outer line angled outwards below costa, the inner line inwards below the cell; orbicular and reniform defined by fuscous, the former small, round, the latter with irregular line in centre, an oblique diffused shade above it from costa and a slight obliquely sinuous line from lower angle of cell to inner margin; postmedial line double filled in with white, bent outwards below costa, then rather strongly dentate, excurved to vein 4, then incurved, with slight brown shade beyond it in submedian interspace, slight dark streak from it to termen in submedian fold and some white points on costa; the veins of terminal area with slight dark streaks; subterminal line absent; a terminal series of black points with slight dark streaks from them intersecting the cilia. Hind wing grey-white tinged with brown and with reddish ochreous at base, the veins rather darker; a faint curved postmedial line and terminal series of slight dark lunules; cilia white; the underside white slightly irrorated with brown, a blackish discoidal lunule and minutely waved postmedial line.

Hab. Canada, Ontario, London (*Saunders*), 3 ♀, Manitoba, Aweme (*Criddle*), 1 ♀; U.S.A., Eastern States and West to Utah, New Hampshire, Massachusetts, Beverly (*Packard*), 1 ♀, New York (*Doubleday*, *Scudder*), 1 ♂, 1 ♀, Evans Center (*Grote*), 2 ♂, 3 ♀, Distr. of Columbia, Washington, Pennsylvania, Mt. Airey, Georgia, Virginia, Texas. *Exp.* 60–68 millim.

Larva. Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 46, pl. vi. f. 17.

Head shining black. Body whitish, a double dorsal and lateral black line, more or less broken; dorsum of joints 12–13 black; hairs fine, long, pale yellow, growing from the skin, with a pair of slender long black pencils on joints 5 and 7 and a single one on joint 12; feet black. Food-plant: Maple (*Acer*).—H. G. D.

3746. Acronycta hesperida. (Plate CXXVII. fig. 1.)

Acronycta hesperida, Smith, Ent. News Philad. viii. p. 148 (1897); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 49, pl. x. f. 9; Dyar, Cat. Lep. N. Am. p. 99.

♀. Head and thorax grey-white mixed with fuscous brown; palpi and frons with dark brown patches at sides; patagia with black streaks on upper edges at base; abdomen grey-white suffused

and irrorated with fuscous brown. Fore wing grey-white very thickly irrorated with fuscous brown; subbasal line represented by a slight dark striga from costa; antemedial line very indistinct, double, rather diffused, oblique, angled outwards below costa and above inner margin and inwards just below cell; orbicular and reniform suffused with fuscous and defined by blackish, the former small, irregularly rounded, and rarely with a slight dark streak from its lower extremity to the latter, which is narrow and bar-shaped; postmedial line double filled in with whitish, the outer line formed by small rather diffused black lunules, bent outwards below costa and incurved below vein 4, with some dark suffusion beyond it in submedian interspace, slight black streak in submedian fold and minute white points on costa; the postmedial area slightly tinged with brown; subterminal line absent; a series of small blackish spots on termen and base of cilia. Hind wing white tinged with brown, the veins brown; a terminal series of slight brown points; cilia white with slight brown line at tips; the underside white irrorated with brown, a brown discoidal spot and diffused postmedial line excurved to vein 4, then incurved.

Hab. CANADA, Manitoba, Aweme (*Criddle*), 1 ♀, Br. Columbia, Kaslo (*Mrs. Nicholl*), 1 ♀, Victoria, 1 ♀, Vancouver, Nanaimo; U.S.A., Washington, Seattle, Tacoma, California. *Exp.* 56–64 millim.

Larva. Head shining black. Body black, clothed with short dense even hairs forming rings on the segments, the incision bare; bright red-brown dorsally, whitish laterally; a single black hair-pencil on joints 5, 7, and 12. Feet black. Food-plant: *Alnus*.—H. G. D.

*3747. Acronycta hastulifera.

Phalæna hastulifera, Smith & Abbot, Ins. Georgia, ii. p. 183, pl. 92 (1797); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 47, pls. ii. f. 12 & iii. f. 5; Smith, Cat. Noct. N. Am. p. 41.

♂. Head and thorax whitish grey with slight dark irroration; abdomen white irrorated with brown. Fore wing whitish grey with slight dark irroration; subbasal line absent or represented at costa only; antemedial line incomplete, oblique, double, the inner line more prominent, represented by a small spot on costa, slight dentate mark just below cell and faint patch on inner margin at middle; orbicular defined by black, small or large, round or elliptical; reniform large, incompletely defined and with dark lunule in centre; medial shade oblique from costa to reniform, then indistinct; postmedial line single, black, sometimes defined on inner side by a pale shade, and on outer by a dark shade, bent outwards below costa, then dentate, slightly incurved at discal fold, incurved below vein 4, crossed by a black streak in submedian fold not reaching termen; a series of black spots on termen and base of cilia. Hind wing whitish faintly tinged with yellow, a terminal

series of dark lunules; the underside whitish with some dark irroration, a dark discoidal spot.

♀. Head, thorax, and fore wing bluer grey; hind wing tinged with fuscous brown and with more or less distinct postmedial line on underside.

Hab. Canada; U.S.A., Massachusetts, New York, Pennsylvania, New Jersey, Distr. of Columbia, Georgia, Centr. States, California. *Exp.* 42–50 millim. This species is unknown to me.

Larva. Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 49, pl. vi. ff 12, 13.

Head shining black. Body dark brown, evenly clothed with short dense hairs growing from the skin, black intermixed with white dorsally, red-brown laterally; no hair-pencils; feet black. Food-plant: Alder (*Alnus*).—H. G. D.

3748. Acronycta dactylina. (Plate CXXVII. fig. 2.)

Acronycta dactylina, Grote, Proc. Bost. Soc. N. H. xvi. p. 239 (1874); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 51, pl. i. f. 3; Smith, Cat. Noct. N. Am. p. 40.

♂. Head and thorax violaceous grey mixed with dark iron-brown; sides of palpi and frons with black-brown patches; shoulders with blackish streaks; tarsi banded with blackish; abdomen whitish suffused and irrorated with dark iron-brown. Fore wing violaceous grey thickly irrorated with iron-brown; subbasal line represented by a diffused oblique brown striga from costa; antemedial line indistinct, double, oblique, dentate, the lines rather widely separated; orbicular slightly defined by brown, small, round; reniform a diffused brown lunule with oblique brown shade above it from costa; an oblique sinuous rather diffused brown line from lower angle of cell to inner margin; postmedial line double at costa, then defined by whitish on inner side, dentate, strongly incurved below vein 4 and with an oblique black striga before it below vein 2; the postmedial area suffused with iron-brown and with some whitish points on costa; subterminal line absent; a terminal series of small black lunules with brown spots beyond them on the cilia. Hind wing white, the veins tinged with brown; a terminal series of dark striæ; the underside with the costal area slightly irrorated with brown, a dark discoidal spot.

♀. Darker, hind wing wholly suffused and irrorated with brown, the terminal area rather darker, an indistinct sinuous postmedial line; cilia white; the underside white irrorated with brown, a brown discoidal spot and minutely waved postmedial line incurved below vein 4.

Hab. Canada, Quebec, Ottawa (*Gibson*), 1 ♂; U.S.A., Maine, New Hampshire, Massachusetts, New York, 1 ♂, 1 ♀ type, Distr. of Columbia, Minnesota, Colorado. *Exp.* ♂ 56, ♀ 62 millim.

Larva. Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 52, pl. vii. ff. 18, 19.

As in *A. hesperida*, but the bands of hair less of a reddish brown, more purplish.—H, G. D.

3749. Acronycta insita. (Plate CXXVII. fig. 3.)

Acronycta insita, Wlk. ix. 61 (1856); Smith, Cat. Noct. N. Am. p. 41.
Acronycta denvera, Smith, J. N.Y. Ent. Soc. xiii. p. 189 (1905).

♂. Head, thorax, and abdomen white mixed with fuscous brown; sides of palpi and frons brown. Fore wing white irrorated with pale brown, the veins with slight dark streaks; subbasal line represented by a faint dark mark on costa; antemedial line double, the two lines rather widely separated especially towards costa, somewhat angled outwards below costa and inwards in submedian fold, then oblique and excurved above inner margin; orbicular a rounded dark annulus on the outer antemedial line; reniform a small lunule defined by blackish at sides on a diffused brown mark; postmedial line black defined by white on inner side, strongly bent outwards below costa, then minutely dentate, slightly angled inwards in discal fold and strongly incurved below vein 4, with oblique black striæ before it above vein 5 and below 2 and black streak from it to termen in submedian fold; subterminal line absent; a terminal series of small black spots with streaks from them intersecting the cilia, a double spot on each side of submedian fold. Hind wing white, the veins and terminal area very slightly irrorated with brown; a fine dark terminal line, the underside with dark discoidal spot.

♀. More thickly irrorated with brown.

Hab. Canada, Ontario, Orillia (*Bush*), 1 ♀ type; U.S.A., New York, 3 ♂, 1 ♀, Colorado, Denver, 1 ♂ cotype *denvera*. *Exp.* 52–54 millim.

Larva. Head white, blotched with black. Body yellowish, the hairs long, soft, fine, growing from the skin, yellow; no pencils. Food-plant: Poplar.—H. G. D.

3750. Acronycta innotata. (Plate CXXVII. fig. 4.)

Acronycta innotata, Guen. Noct. i. p. 50 (1852); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 73, pl. ii. ff. 17, 18; Smith, Cat. Noct. N. Am. p. 38.
Diphtera grœfii, Grote, Proc. Ent. Soc. Phil. ii. p. 68, pl. 3. f. 6 (1863).
Apatela griseor, Dyar, Can. Ent. xxxvi. p. 29 (1904).

♂. Head and thorax white tinged with pale brown; palpi with black spots at side of 2nd joint; antennæ black except at base; shoulders with black streaks; tegulæ with slight dark streaks at middle; abdomen white slightly mixed with fuscous. Fore wing white slightly tinged with brown and irrorated with fuscous; a black point at base; subbasal line represented by a black point on costa, the antemedial line by oblique black rather diffused striæ from costa, cell and inner margin; orbicular represented by a fuscous point, the reniform a diffused fuscous lunule; a slight medial blackish striga from costa; postmedial line with black striga from costa, strongly bent outwards and interrupted below costa, then black defined by white on inner side, minutely waved, slightly incurved at discal fold and strongly below vein 4, angled outwards at vein 1, with slight black marks before it below vein 2

and on inner margin and some dark suffusion beyond it with white points on costa; subterminal line absent; a series of small black spots on termen and base of cilia. Hind wing silvery white with faint discoidal spot, traces of postmedial line and terminal series of small blackish spots; the underside with black discoidal spot, indistinct waved postmedial line, and terminal series of small black spots.

♀. Slightly browner, the hind wing somewhat more irrorated with fuscous.

Ab. 1. *griseor.* Somewhat larger, fore wing more irrorated with fuscous and the lines more distinctly defined by black.—Br. Columbia.

Hab. Canada (*Norman*), 1 ♂, Ottawa (*Gibson, Young, Saunders*), 2 ♂, 5 ♀, Ontario, London, Manitoba, Aweme (*Criddle*), 1 ♀, Br. Columbia, Kaslo; U.S.A., Maine, New Hampshire, Jefferson, New York, Rochester, Ithaca, Long Island, Evans Center (*Grote*), 2 ♂, 3 ♀, Trenton Falls (*Doubleday*), 1 ♂, 1 ♀ type, Pennsylvania, Distr. of Columbia, Washington. *Exp.* 35–47 millim.

Larva. Beutenmüller, Ent. News Philad. ii. p. 153 (1891).

Head whitish, the vertices of the lobes black; body grey-brown; warts i and ii black; two lateral series of yellow spots between them; secondary hairs sparse, whitish; ventral surface grey. Food-plant: ? Hickory.

Ab. *griseor.*—Head mottled with black below, red on the vertices of the lobes. Body flattened, with a fringe of hairs along the subventral edge; brown, the dorsal tubercles dark, the lateral ones pale; hairs short, sparse, growing from the skin. Food-plant: Birch.—H. G. D.

*3751. Acronycta othello. (Plate CXXVII. fig. 5.)

Acronycta othello, Smith, Ann. N.Y. Ac. Sci. xviii. p. 94 (1908).

Head and thorax whitish grey mixed with fuscous black, the vertex of head black, the tegulæ mostly black, the edges of patagia and vertex of thorax black; tarsi fuscous, ringed with white; abdomen fuscous grey, the ventral surface whitish. Fore wing with the basal area bluish grey suffused with black, the medial area below and beyond the cell black, the terminal area grey with the veins streaked with black; antemedial line double, black, obliquely excurved and waved; orbicular defined by black, small, round; reniform incompletely defined by black, small or moderate, obscured by the medial shade; postmedial line double, black, the outer line more distinct, bent outwards below costa, then dentate, strongly incurved below vein 4, a black streak from it to termen in submedian fold; subterminal line absent; cilia intersected with black. Hind wing of male white, in female suffused with greyish fuscous; the underside white irrorated with fuscous, a small black discoidal spot.

Hab. U.S.A., California, San Diego. *Exp.* 44 millim. This species is unknown to me; figured from a drawing from type in Coll. J. B. Smith.

3752. Acronycta longa. (Plate CXXVII. fig. 6.)

Acronycta longa, Guen. Noct. i. p. 54 (1852).
Acronycta xylinoides, Guen. Noct. i. p. 56 (1852).
Acronycta xyliniformis, Guen. Noct. iii. p. 400 (1852); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 166, pl. iv. ff. 5, 10, 12, 15; Smith, Cat. Noct. N. Am. p. 45.
Apatela pallidicoma, Grote, Bull. U.S. Geol. Geog. Surv. Terr. iv. p. 169 (1878); Smith, Cat. Noct. N. Am. p. 45.

Head and thorax grey-white or purplish grey mixed with brown; palpi white, the 2nd joint black at sides; vertex of head with paired black streaks; tegulæ with dorsal black streak; shoulders and outer edges of patagia streaked with black; tibiæ streaked with black, the tarsi banded with black; abdomen pale rufous slightly irrorated with fuscous, the ventral surface white. Fore wing grey-white or purplish grey slightly tinged with reddish brown and more or less irrorated with black, some white at base of inner margin; subbasal line represented by double dark striæ from costa; a slight black streak in submedian fold from base to the antemedial line, which is double, oblique, waved, angled outwards below costa, very indistinct except the outer line towards costa; the medial area with black streak above vein 1; orbicular and reniform defined by black with white patch between them in cell, the former small, round, the latter with the black reduced to points on outer side; an oblique dark striga from costa to reniform; postmedial line black defined by white on inner side, double at costa, bent outwards below costa, then strongly dentate, oblique below vein 4, angled inwards in submedian fold and outwards on vein 1, crossed by a black streak in submedian fold from well before it to termen towards which it forks and with some white points beyond it on costa; traces of a whitish subterminal line, angled inwards in submedian fold and with blackish streaks beyond it in the interspaces intersecting the cilia. Hind wing pure white, in female usually more or less suffused with brown especially on terminal area, the apex faintly tinged with brown; the underside with the costal area slightly irrorated with brown.

Hab. Canada; U.S.A., 3 ♂, 2 ♀, New York, 3 ♀ type *pallidicomma*, Rhode I., 1 ♀, Distr. of Columbia, Washington, Illinois, Carbondale, 1 ♀, Missouri, 1 ♂, Florida (*Doubleday*), 1 ♀, Texas. *Exp.* 34–50 millim. Type † *xylinoides* in Mus. Paris.

Larva. Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 168, pl. viii. f. 35.

Head shining black or red. Body blackish, shading to red below, warts large; the hairs in dense tufts, spinose, brown, mixed with short feathery white ones on wart i. on joints 5 to 11; hairs of joint 5 blackish or red. Food-plants: Low bushes.—H. G. D.

3753. Acronycta sperata. (Plate CXXVII. fig. 7.)

Acronycta sperata, Grote, Bull. Buff. Soc. Nat. Sci. i. p. 81, pl. ii. f. 1 (1873); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 154, pl. ii. f. 6; Smith, Cat. Noct. N. Am. p. 45.
Acronycta speratina, Smith, J. N.Y. Ent. Soc. xiii. p. 190 (1905).

Head and thorax white mixed with dark brown; 2nd joint of palpi banded with black; shoulders with blackish stripes; fore tarsi banded with black; abdomen white irrorated and suffused with brown. Fore wing white thickly irrorated with brown and suffused with brown beyond the medial and postmedial lines; subbasal line represented by double dark striæ from costa; antemedial line double, oblique, waved; orbicular and reniform with brown centres defined by blackish, the former very small, round, the latter large; medial line oblique from costa to reniform, angled outwards at lower angle of cell and on vein 1, the brown suffusion beyond it strong; postmedial line black defined by whitish on inner side, double at costa, bent outwards below costa, then dentate, slightly incurved at discal fold, incurved below vein 4, some white points beyond it on costa; a diffused whitish subterminal line slightly defined by brown on outer side and very slightly excurved below vein 7 and at middle; a series of small blackish spots on termen and base of cilia defined by whitish marks on inner side. Hind wing pure white, the apex slightly tinged with brown; the underside with the costal area irrorated with brown.

Ab. 1. *speratina*. Rather larger and paler, fore wing with the markings more diffused.—Colorado.

Hab. Canada, Manitoba, Aweme (*Criddle*), 1 ♀; U.S.A., Massachusetts, Newton, 2 ♂ type, New York, 3 ♀, Center (*Bailey*), 1 ♀, Distr. of Columbia, Illinois, Missouri, Colorado, Denver. *Exp.* 34–38 millim.

Larva. Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 155, pl. viii. ff. 31, 32.

Reddish brown, the body shaded with blackish, more especially dorsally; warts large with thick clusters of brown spinose hairs. Food-plants: Low bushes.—H. G. D.

3754. Acronycta euphorbiæ.

Noctua euphorbiæ, Schiff. Wien. Verz. p. 67 (1776); Fabr. Mant. Ins. ii. p. 174 (1787); Esp. Schmett. iv. pl. 117. ff. 1–3; Hübn. Eur. Schmett., Noct. ff. 12 & 529; Dup. Lép. Fr. vi. p. 247, pl. 88. f. 3; Herr.-Schäff. Eur. Schmett., Noct. ff. 375, 377; Frr. Neue Beitr. pls. 177, 538; Staud. Cat. Lep. pal. p. 133.

Noctua obscura, Ström, Dansk Vid. Selsk. Skr. 1783, p. 79.

Noctua euphrasiæ, Brahm, Ins. Kal. ii. p. 143 (1791); Dup. Lép. Fr. vi. p. 250, pl. 88. f. 4; Herr.-Schäff. Eur. Schmett., Noct. ff. 373–4; Frr. Neue Beitr. pl. 537.

Noctua esulæ, Hübn. Eur. Schmett., Noct. f. 613 (1818).

Noctua cyparissæ, Hübn. Eur. Schmett., Noct. f. 615 (1818).

Noctua abscondita, Herr.-Schäff. Eur. Schmett., Noct. ii. ff. 87–89 (1845), nec Treit.

Acronycta montivaga, Guen. Noct. i. p. 57 (1852).

Acronycta myriæ, Guen. Noct. i. p. 59 (1852).

♂. Head and thorax white mixed with black, the head slightly tinged with ochreous: palpi with the 2nd joint blackish; frons with blackish bar; tegulæ slightly tipped with black; tarsi blackish ringed with white; abdomen whitish mixed with fuscous brown. Fore wing grey-white thickly irrorated with black; subbasal line

represented by slight blackish striæ from costa and cell; antemedial line rather indistinct, double, the lines rather widely separated towards costa on which are small black spots, oblique, waved, angled inwards on vein 1; orbicular defined by black and with dark point in centre, small, round; reniform defined by black, the black on outer edge reduced to points, the centre suffused with fuscous; an oblique black striga from costa to reniform and oblique waved line from lower angle of cell to inner margin; postmedial line black defined by whitish lunules on inner side, bent outwards below costa, then dentate, strongly incurved below vein 3 and angled outwards on vein 1, some whitish suffusion beyond it on costa; subterminal line represented by a series of slight whitish marks in the interspaces except at middle with slight dentate blackish marks on their outer side; a terminal series of blackish points with slight blackish streaks from them intersecting the cilia. Hind wing pure white with slight dark irroration on the veins towards termen on which is a series of slight dark spots; the underside with the costal area slightly irrorated with brown, a small indistinct discoidal spot.

♀. Hind wing fuscous brown, the cilia white.

Ab. 1. *obscura*. Larger and darker.—Alps, Norway.

Ab. 2. *myricæ*. Smaller and darker.—Britain mountains, Tarbagatai Mts.

Ab. 3. *euphrasiæ*. Paler, whitish or yellowish grey.—S. Europe.

Ab. 4. *esulæ*. Fore wing suffused with brown.

Hab. Britain, Forres, Rannoch, Leech Coll., England, Leech Coll.; France, Sand and Leech Colls.; Germany, Zeller, Frey and Leech Colls.; Austria; Hungary, Leech Coll.; Switzerland, Zeller and Frey Colls.; Spain; Italy; Sicily, Zeller Coll.; Dalmatia; Balkan States; Scandinavia; Russia; Armenia; Asia Minor; Siberia; W. Turkestan, Tarbagatai Mts. *Exp.* 32–40 millim.

Larva. Meyr. Brit. Lep. p. 143; Barrett, Lep. Brit. iii. p. 263, pl. 122. f. 3.

Black, the segmental incisions greenish grey, sometimes mostly suffused with whitish; subdorsal series of whitish or pale yellow trilobate spots; subspiracular line orange-red; 2nd somite with orange-red band; fascicles of black hair mixed with whitish; head black. Food-plants: *Myrica*, *Erica*, Birch, &c. 8–9.

3755. Acronycta abscondita.

Acronycta abscondita, Treit. Schmett. Eur. x. 2. p. 5 (1835); Frr. Neue Beitr. pl. 178; Herr.-Schäff. Eur. Schmett., Noct. f. 378; Staud. Cat. Lep. pal. p. 133.

Noctua euphorbiæ, Herr.-Schäff. Eur. Schmett., Noct. f. 376 (nec Schiff.).

♂. Head and thorax grey-white mixed with fuscous black; palpi with the 2nd joints blackish; tarsi blackish ringed with white; abdomen whitish suffused with brown, the basal crest black and white. Fore wing grey-white almost entirely suffused and irrorated with fuscous brown, the veins with slight dark streaks;

subbasal line represented by traces of a dark striga from costa; antemedial line indistinct, double, waved, slightly oblique; orbicular defined by blackish, small, round; reniform defined by blackish on inner side, faintly defined on outer, small; a faint dark shade from middle of costa to reniform and indistinct oblique waved line from lower angle of cell to inner margin; postmedial line very indistinct, slightly bent outwards below costa, then produced to slight dark streaks on the veins, excurved to vein 4, then incurved, some white points beyond it on costa; a subterminal series of slight whitish marks in the interspaces, excurved below vein 7 and incurved below vein 3; cilia white at tips. Hind wing white, the veins towards termen slightly tinged with brown; a slight brown terminal line; the underside with the costal area irrorated with brown, a small brownish discoidal spot.

♀. Hind wing brown, the cilia white.

Hab. Germany, Zeller, Frey, and Leech Colls.; Lapland, Leech Coll.; Russia. *Exp.* 32–36 millim.

Larva. Kirby, Butt. & Moths Eur. p. 158; Hffm. Raup. p. 76, pl. 22. f. 2. Differs from *A. euphorbiæ* in having a red lateral stripe and no red band on 2nd somite. Food-plants: Heath and Spurge. 6–7–8.

Sect. III. (*Acronycta*). Thorax clothed with hair only; abdomen with the basal crest hairy.

A. Fore wing bluish white rather strongly irrorated with fuscous. *cretata.*

B. Fore wing yellowish white, slightly or not irrorated with fuscous ..... *leporina.*

3756. Acronycta cretata. (Plate CXXVII. fig. 8.)

Acronycta cretata, Smith, Ent. News Philad. viii. p. 148 (1897); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 58, pl. xi. ff. 3, 4; Dyar, Cat. Lep. N. Am. p. 100.

Head and thorax white with a few fuscous hairs; palpi and frons black at sides; antennæ blackish; shoulders with black streaks; abdomen white dorsally tinged with fuscous. Fore wing white sparsely irrorated with blackish especially on inner medial area and beyond the postmedial line; a short sinuous black streak below base of cell; subbasal line represented by some black scales below costa, the antemedial line by diffused blackish marks on costa and below cell; orbicular represented by a very small black spot, the reniform by a small black lunule with small diffused black mark above it on costa; postmedial line with black point at costa, then only defined by the black irroration beyond it, very strongly bent outwards below costa, slightly incurved at discal fold and with small black spots above and below vein 5, strongly incurved below vein 4 and minutely dentate, with diffused black patch beyond it from below vein 3 to above 1 crossed by a slight black streak in submedian fold; the termen and base of cilia with small black spots in the interspaces. Hind wing silvery white; a terminal

series of slight brown striæ; the underside with black discoidal spot and traces of curved postmedial line.

Hab. CANADA, Hudson's Bay (*Barnston*), 1 ♂, Mackenzie R., Fort Good Hope, 1 ♀; U.S.A., Colorado, Garfield Co. (*Bruce*), 1 ♀ cotype. *Exp.* 46 millim.

3757. Acronycta leporina.

Noctua leporina, Linn. Syst. Nat. ed. x. p. 510 (1758); Esp. Schmett. iv. pl. 91. ff. 1–5; Hübn. Eur. Schmett., Noct. ff. 15–16; Dup. Lép. Fr. vi. p. 225, pl. 87. f. 3; Steph. Ill. Brit. Ent., Haust. iii. p. 35; Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 59, pl. xi. ff. 1, 2; Staud. Cat. Lep. pal. p. 131; Dyar, Cat. Lep. N. Am. p. 100.
Noctua bradyporina, Hübn. Eur. Schmett., Noct. ff. 570–1 (1818); Treit. Eur. Schmett. v. 1, p. 9 (1825); Herr.-Schäff. Eur. Schmett., Noct. f. 636; Steph. Ill. Brit. Ent., Haust. iii. p. 36, pl. 26. f. 3.
Apatela vulpina, Grote, Can. Ent. xv. p. 8 (1883); Smith, Cat. Noct. N. Am. p. 40.
Acronycta bimacula, Maassen, Stett. ent. Zeit. 1871, p. 27.
Acronycta semivirga, Tutt, Entom. 1888, p. 52.
Acronycta leporella, Staud. Stett. ent. Zeit. 1888, p. 245.
Acronycta cineracea, Græs. Berl. ent. Zeit. 1888, p. 310.
Acronycta sancta, H. Edw. Ent. Am. iii. p. 185 (1888); Smith, Cat. Noct. N. Am. p. 40.
Apatela mœsta, Dyar, Can. Ent. xxxvi. p. 29 (1904).

Head and thorax pure white; palpi black at sides; antennæ blackish; shoulders with black stripes; metathorax tinged with brown; tarsi blackish at extremities; abdomen white dorsally with fuscous hair mixed. Fore wing pure white; a black mark at base of costa; subbasal line represented by a black point on costa; a short sinuous black streak below base of cell expanding into a spot at base; antemedial line represented by an oblique

Fig. 19.—*Acronycta leporina*, ♂. ½.

black striga from costa and inwardly oblique striga from cell; orbicular absent; reniform a small black lunule with sinuous black bar above it from costa; postmedial line represented by a black point on costa, then by a few black scales with more distinct small dentate marks above and below vein 5 and below vein 2, bent outwards below costa, then dentate, incurved at discal fold and below vein 4; subterminal line absent; cilia intersected by black streaks in the interspaces. Hind wing pure white; the underside with faint discoidal spot.

Ab. 1. *bradyporina*, Treit. Head and thorax irrorated with fuscous; fore wing strongly irrorated with fuscous, the veins with slight dark streaks, the postmedial line more distinct, minutely dentate with series of small black spots on it and more distinct dentate black marks at discal fold and below vein 2; hind wing with the veins of terminal half irrorated with black, a terminal series of black striæ with some fuscous beyond them at base of cilia.

Ab. 2. *semivirga*. Fore wing with the terminal area suffused with fuscous.

Ab. 3. *leporella*. Fore wing white irrorated with fuscous, the markings indistinct.—Tibet, E. Siberia, Japan.

Ab. 4. *mœsta*. Much more thickly irrorated with grey.—Br. Columbia.

Hab. CANADA, Ontario, Br. Columbia, Kaslo; U.S.A., Maine, New Hampshire, Jefferson, Massachusetts, New York, N. Illinois; BRITAIN, Leech Coll.; FRANCE, Sand Coll.; HOLLAND, Zeller Coll.; DENMARK; GERMANY, Zeller, Frey, and Leech Colls.; AUSTRIA, Zeller Coll.; HUNGARY; SWITZERLAND; SPAIN, Bilbao; N. ITALY; FINLAND; RUSSIA, St. Petersburg, Zeller Coll., Sarepta; ARMENIA; W. TURKESTAN, Issyk Kul; W. SIBERIA; E. TURKESTAN, Ili; TIBET, Kuku Nor, Amdo; E. SIBERIA, Amurland, Ussuri; JAPAN, Oiwake (*Pryer*), 1 ♂. *Exp.* 38–48 millim.

Larva. Meyr. Brit. Lep. p. 140; Barrett, Lep. Brit. iii. p. 226, pl. 120. f. 1; Smith, Pr. U.S. Nat. Mus. xxi. pl. 8. f. 26.

Green or greenish yellow, sometimes with obscure red-brown dorsal and lateral suffusion; numerous long white or yellowish hairs directed forwards on right side and backwards on left; sometimes with dorsal tufts of black hairs; head sometimes marked with black. Food-plants: Alder, Birch, Elm, *Salix*. 7–9.

(American.) Head pale brownish. Body yellow, the hairs long, soft, white or yellow, growing from the skin. Food-plant: Poplar. —H. G. D.

Ab. *mœsta*.—Head white, largely black in front. Body whitish or yellowish; the hairs long, soft, fine, growing from the skin, yellow or white, no hair-pencils; a more or less well developed dorsal black stripe. Food-plant: Poplar.—H. G. D.

Genus **EULONCHE**.

	Type.
Eulonche, Grote, Bull. Buff. Soc. Nat. Sci. i. p. 81 (1873).....	*oblinita*.

Proboscis slight, non-functional; palpi slender, obliquely porrect, extending to well beyond frons, the 2nd joint fringed with long hair; frons smooth; eyes large, rounded; antennæ laminate; thorax clothed with hair and hair-like scales and without crests; tibiæ fringed with long hair; abdomen with some rough hair at base and lateral fringes of hair but without crests. Fore wing narrow, the apex more or less produced and the termen oblique, not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to from the areole, 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base only.

A. Fore wing with terminal series of small black spots.
  a. Fore wing with the ground-colour white ..... *oblinita*.
  b. Fore wing with the ground-colour yellowish ..... *arioch*.
B. Fore wing without terminal series of black spots.
  a. Fore wing bluish white irrorated with fuscous ..... *lanceolaria*.
  b. Fore wing black-brown slightly irrorated with white... *insolita*.

3758. Eulonche oblinita.

Phalæna oblinita, Smith & Abbot, Ins. Georgia, ii. p. 187, pl. 94 (1797); Smith & Dyar, Pr. U.S Nat. Mus. xxi. p. 169, pl. iv. ff. 6, 13, 14; Smith, Cat. Noct. N. Am. p. 46.
Acronycta salicis, Harr. Ent. Corresp. 1863, p. 314, f. 44.

Head and thorax white mixed with fuscous; palpi with the 2nd joint black above; antennæ blackish; abdomen white slightly irrorated with brown. Fore wing white irrorated with fuscous, the area below and beyond lower angle of cell whiter and a whitish fascia from reniform to termen below apex; subbasal line represented by an oblique black striga from costa; antemedial line indistinct, double filled in with white, strongly angled inwards on the veins and outwards in the interspaces; orbicular slightly and incompletely defined by black, elongate elliptical; reniform defined by black points and with brownish centre, a slight diffused oblique dark

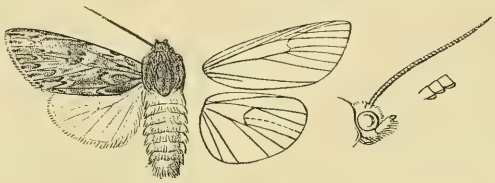


Fig. 20.—*Eulonche oblinita*, ♂. ½.

bar above it from costa; postmedial line indistinct, strongly bent outwards below costa, then strongly dentate and with slight black lunules on it, strongly incurved below vein 3, some blackish points beyond it on costa; traces of a white subterminal line slightly angled outwards at vein 7 and with minute dark streaks beyond it in the interspaces; a terminal series of small black spots. Hind wing pure white, with series of black points on termen from apex to vein 2; the underside with small blackish discoidal spot.

Hab. Canada (*Norman*), 1 ♀, Nova Scotia (*Redman*), 1 ♀, Manitoba, Aweme (*Criddle*), 1 ♀; U.S.A., New York, 3 ♂, 2 ♀, Evans Center (*Grote*), 1 ♂, 1 ♀, Ohio, 2 ♂, Distr. of Columbia, Florida, Kansas, 1 ♂, Riley Co. and West to Rocky Mts. *Exp.* 40–50 millim.

Larva. Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 170, pl. viii. ff. 29–30.

Head shining black. Body black with a broad yellow substigmatal band and a broken dotted subdorsal one; warts large, light red; each segment with a more or less distinct transverse red band;

hairs short, bristly, spinose, reddish. Food-plants: Alder and other low bushes.—H. G. D.

*3759. Eulonche arioch.

Acronycta arioch, Streck. Lep. Rhop. & Het. Suppl. i. p. 5 (1898); Dyar, Cat. Lep. N. Am. p. 104.

Head, thorax, and abdomen creamy ochreous white. Fore wing creamy ochreous white, irrorated with brown especially on costal area; four black points in cell; postmedial line represented by a series of small dentate marks; a very faint subterminal series of short dark streaks; a terminal series of round black points; cilia white. Hind wing pure white.

Hab. U.S.A., Louisiana, New Orleans. *Exp.* 54 millim. This species is unknown to me.

3760. Eulonche lanceolaria. (Plate CXXVII. fig. 9.)

Apatela lanceolaria, Grote, Proc. Ac. Nat. Sci. Phil. 1875, p 418; id. Ill. Essay, 1882, p. 50, pl. 1. f. 5; Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 171; Smith, Cat. Noct. N. Am. p. 46.

Head and thorax bluish white mixed with fuscous brown; palpi with the 2nd joint dark brown above; patagia slightly edged with brown above; tarsi banded with brown; abdomen greyish suffused with red-brown. Fore wing bluish white thickly irrorated with fuscous brown; a white streak in cell above median nervure; an oblique white fascia from end of cell to near termen below apex; a blackish point at lower angle of cell; postmedial line represented by a very indistinct whitish band, oblique from vein 4 to submedian fold, then erect, crossed by a dark streak in submedian fold from well before it to termen and another slight dark streak above vein 4 from beyond lower angle of cell to termen; the interspaces of terminal area with slight dark streaks; whitish subterminal lunules between veins 4 and 2; a series of blackish points at base of cilia, with slight dark streaks from them intersecting the cilia. Hind wing pure white; the underside with the costal area slightly irrorated with fuscous, a blackish discoidal point.

Hab. Canada, Manitoba, Aweme (*Criddle*), 1 ♀; U.S.A., Massachusetts, 1 ♂, 1 ♀ type. *Exp.* ♂ 46, ♀ 48 millim.

Larva. Smith & Dyar, Pr. U. S. Nat. Mus. xxi. p. 172.

Head black on the face, pale on the sides. Body green, more or less shaded with black, especially in dorsal and lateral stripes; warts large, pale; the hairs in tufts, spinose, black, mixed with a few long pale ones. Food-plants: Various low bushes.—H. G. D.

3761. Eulonche insolita. (Plate CXXVII. fig. 10.)

Acronycta insolita, Grote, Bull. Buff. Soc. Nat. Sci. i. p. 82 (1873); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 173; Smith, Cat. Noct. N. Am. p. 46.

♂. Head and thorax black-brown mixed with some brownish

white; palpi white at base; sides of frons, basal joint of antennæ in front, some scales on base of shaft and streaks behind their bases white; pectus white; legs streaked with white; abdomen white irrorated with black-brown especially towards extremity and on ventral surface. Fore wing black-brown slightly mixed with white; faint traces of an antemedial line oblique from costa to submedian fold; orbicular faintly defined by brown, small, round; some faint dark marks on discocellulars; postmedial line very indistinct, bent outwards below costa, then dentate and defined on inner side by faint whitish lunules, strongly incurved below vein 4, some white points beyond it on costa; a subterminal series of faint whitish lunules. Hind wing white, the costal and terminal areas slightly irrorated with brown especially at apex; the underside with the costal area thickly irrorated with brown, a brown discoidal spot.

Hab. U.S.A., Massachusetts, Pennsylvania, 1 ♂ type. *Exp.* 42 millim.

Prof. Smith has gradations indicating that this may be a melanic variety of *E. lanceolaria*.

Genus **MEROLONCHE**.

	Type.
Merolonche, Grote, Ill. Essay, 1882, p. 50	*spinea*.

Proboscis aborted, minute; palpi porrect, hardly reaching beyond the frontal tuft and clothed with long hair, the 3rd joint short; frons smooth; eyes rather small, round; antennæ of male bipectinate with short branches, the apex serrate; head and thorax clothed with hair and hair-like scales and without crests; tibiæ fringed with long hair; abdomen with dorsal crest at base only. Fore wing triangular, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with strong black medial diffused line ..... *lupini*.
B. Fore wing with the medial shade indistinct.
  a. Fore wing thickly irrorated with black ..... *ursina*.
  b. Fore wing suffused with purplish grey ..... *spinea*.

3762. **Merolonche lupini**. (Plate CXXVII. fig. 11.)

Acronycta lupini, Grote, Bull. Buff. Soc. Nat. Sci. i. p. 79 (1873); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 179, pl. iii. f. 2, & pl. x. f. 4; Smith, Cat. Noct. N. Am. p. 35.

Head and thorax bluish white mixed with black; palpi blackish; patagia with slight black lines near edges; tarsi blackish ringed with white; abdomen grey-white suffused with fuscous brown, especially on dorsum. Fore wing bluish white thickly irrorated with black and tinged with brown except on basal area; subbasal line represented by double black striæ from costa; antemedial line double, blackish, rather diffused, irregularly dentate and somewhat

oblique, the lines widely separated; orbicular and reniform small, the former defined by black, round, the latter defined by black on inner side, slightly defined on outer; a strong oblique black bar from costa to reniform, and obliquely incurved dentate line from lower angle of cell to inner margin; postmedial line double filled in with bluish white, the inner line indistinct except at costa, bent outwards below costa, then dentate, incurved below vein 3 and with blackish mark on its inner edge at submedian fold, some black striæ beyond it from costa; subterminal line formed by indistinct whitish marks in the interspaces with blackish points on their outer edges, somewhat angled inwards at discal and submedian folds; a terminal series of black points with blackish streaks from them intersecting the cilia, which are whitish. Hind wing whitish suffused with brown, the veins brown; a slight discoidal spot and traces of diffused postmedial and subterminal lines; a slight dark terminal line; the underside whitish tinged and irrorated with brown, especially on costal and terminal areas, a blackish discoidal lunule with slight dark bar above it from costa.

Hab. U.S.A., California, Mendocino Co., 2 ♂, 1 ♀ type. *Exp.* ♂ 44, ♀ 50 millim.

3763. **Merolonche ursina.** (Plate CXXVII. fig. 12.)

Merolonche ursina, Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 180, pl. x. ff. 5, 6 (1899); Dyar, Cat. Lep. N. Am. p. 105.

♀. Head and thorax white mixed with dark brown and black; patagia with black streaks on outer edges and basal half of inner edges; tarsi blackish ringed with white; abdomen grey irrorated with black and suffused with black-brown. Fore wing grey-white thickly irrorated with black and suffused with black-brown, especially on medial area and beyond the postmedial line; subbasal line represented by two black points on costa; antemedial line very indistinct, double, waved, curved; orbicular defined by blackish, rather elongate elliptical and with slight black streak from it to the reniform, which is suffused with fuscous and indistinctly defined by blackish points; an indistinct diffused dark bar from costa to reniform; postmedial line black defined on either side by grey, bent outwards below costa, then dentate, slightly angled inwards at discal fold and strongly incurved below vein 4, some whitish points beyond it on costa; subterminal line formed by lunulate whitish marks in the interspaces, defined on outer side by slight dark points, excurved below vein 7 and at middle, and somewhat angled inwards at discal and submedian folds; a terminal series of small black spots; cilia chequered black and white. Hind wing whitish suffused with brown except at termen; a faint discoidal spot and indistinct diffused subterminal line; a terminal series of blackish points; cilia chequered blackish and white; the underside white tinged with brown and irrorated with dark brown, a blackish discoidal lunule.

Hab. Canada, Br. Columbia, Fraser R. (*St. John*), 1 ♀; U.S.A. Colorado, Durango, 1 ♀, California, Sierra Nevada. *Exp.* 38–42 millim.

3764. Merolonche spinea.

Apatela spinea, Grote, Buff. Bull. Soc. Nat. Sci. iii. p. 78 (1876); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 179, pl. x. ff. 2, 3; Smith, Cat. Noct. N. Am. p. 35.

Head and thorax whitish tinged with purplish grey and ochreous and mixed with red-brown and some black; sides of palpi and frons red-brown; tegulæ with slight black dorsal streak; patagia edged with black; prothorax with some rufous; tarsi fuscous ringed with white; abdomen greyish suffused with brown and at base with rufous. Fore wing whitish tinged with violaceous grey and slightly irrorated with brown, some dark suffusion beyond the medial and postmedial lines; subbasal line represented by slight

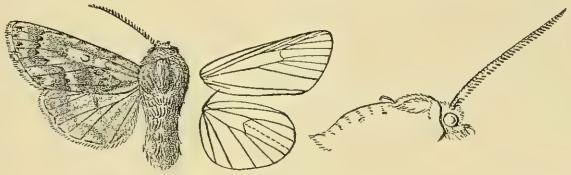


Fig. 21.—*Merolonche spinea*, ♂. ½.

brown bars from costa and cell; antemedial line indistinct, diffused, interrupted, oblique and waved from costa to middle of cell; orbicular hardly traceable, round, with slight black streak above; reniform an indistinct whitish lunule defined on inner side by diffused brown and with some dark points on outer side; a black-brown bar from middle of costa and one above reniform; a diffused incurved brownish medial line from cell to inner margin crossed by a short strong blackish fascia in submedial fold; postmedial line brown defined by white on inner side, double at costa, strongly bent outwards below costa, then minutely dentate, slightly incurved at discal fold and strongly below vein 4, some whitish points beyond it on costa with dark striæ between them; a diffused whitish subterminal line with slight dentate black marks on its outer edge below costa and on vein 2, angled inwards at discal and submedian folds and diffused to tornus; cilia chequered black-brown and white. Hind wing whitish suffused with black-brown, leaving a white patch on termen in submedian interspace; cilia white; the underside white irrorated with brown, a blackish discoidal lunule, two diffused dark bars from medial part of costa, and a diffused oblique line from lower angle of cell to inner margin.

Hab. U.S.A., California, 1 ♂, 2 ♀ type. *Exp.* ♂ 44, ♀ 48 millim.

Genus STILBINA.

Stilbina, Staud. Iris, iv. p. 290 (1891) ..... Type. *hypænides.*

Proboscis aborted; palpi porrect, short, moderately fringed with hair below, the 3rd joint minute; frons with long bilobed corneous process with tuft of hair above it and shorter corneous plate below it excised in front; eyes large, round; antennæ of male bipectinate with long branches to apex; build slender; thorax clothed with hair and scales mixed, the prothorax with spreading crest, the metathorax with decumbent crest; tibiæ smoothly scaled, the spurs long; abdomen without crests. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell to one third.

3765. Stilbina hypænides.

Stilbina hypænides, Staud. Iris, iv. p. 290, pl. 3. f. 12 (1891); id. Cat. Lep. pal. p. 194.

♂. Head yellowish white; sides of palpi and frons red-brown; thorax ochreous suffused with red-brown; legs red-brown, the tarsi fuscous with white rings; abdomen ochreous white. Fore wing whitish suffused with pale ferruginous, the costal area suffused with brown, the median nervure and base of veins arising from it slightly streaked with white; a dark mark at base of costa and

Fig. 22.—*Stilbina hypænides*, ♂. ½.

small subbasal black mark above inner margin; a slight brown streak in basal half of submedian fold defined by whitish below; antemedial line slight, black, angled outwards below costa and in cell, then obsolete; orbicular a large elongate elliptical black-brown patch; reniform a black-brown patch truncate above and rounded below, where it is broken up by the white on veins at lower angle of cell; postmedial line represented by two dark points on costa, then by a whitish line strongly bent outwards below costa, defined by diffused blackish below and slight dark marks above, then obsolete, some slight white striæ from costa beyond it; subterminal line very faint, brownish, excurved below vein 7 and obsolete below vein 5; a terminal series of slight red-brown striæ; cilia chequered dark brown and whitish. Hind wing yellowish white, the terminal area suffused with pale red-brown; the underside white tinged with reddish ochreous.

♀. Fore wing tinged with brown instead of ferruginous; the

costal area and cell suffused with pale brown ; median nervure not streaked with white; the streak in submedian fold more prominent; antemedial line double from cell to inner margin, extremely strongly excurved in submedian interspace, then very strongly angled inwards on vein 1 and outwards above inner margin ; orbicular and reniform with slight whitish annuli defined by black ; postmedial line represented by dark points on the veins from costa to vein 3 and bent outwards below costa, below vein 3 incurved, double, waved; subterminal line rather more distinct and traceable throughout, angled outwards at veins 7, 6, then oblique.

Hab. Syria ; Palestine, 1 ♂, 1 ♀. *Exp.* ♂ 36, ♀ 38 millim.

Genus HYPEUTHINA.

Type.

Hypeuthina, Led. Verh. zool.-bot. Ges. Wien, 1855, p. 199 ..... *fulgurita.*

Proboscis absent; palpi porrect, extending to just beyond frons and moderately fringed with hair below, the 3rd joint minute ; frons with rounded prominence with corneous plate with curved outer edge at middle, and large corneous plate below it ; eyes large, rounded ; antennæ of male bipectinate with very short branches ; build slender ; thorax clothed with hair and scales mixed and without distinct crests ; tibiæ smoothly scaled, the spurs long ; abdomen without crests. Fore wing with the apex rounded, the termen evenly curved and not crenulate ; veins 3 and 5 from near angle of cell ; 6 from upper angle ; 9 from 10 anastomosing with 8 to form the areole ; 11 from cell. Hind wing with veins 3, 4 from angle of cell ; 5 obsolescent from middle of discocellulars ; 6, 7 from upper angle ; 8 from middle of cell.

A. Fore wing with white streaks in discal and submedian folds defined by black below ..... *fulgurita.*
B. Fore wing without white streaks in discal and submedian folds defined by black below ..... *numida.*

3766. Hypeuthina fulgurita.

Hypeuthina fulgurita, Led. Verh. zool.-bot. Ges. Wien, 1855, p. 199, pl. 4. f. 1 ; Staud. Cat. Lep. pal. p. 373.

♂. Head and thorax white, the head tinged with ochreous ; sides of palpi and frons brown ; antennæ ochreous ; dorsum of

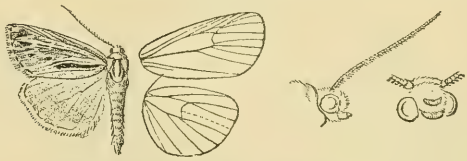


Fig. 23.—*Hypeuthina fulgurita*, ♂. ½.

thorax with pair of black streaks ; pectus and legs brown ; abdomen ochreous white, the ventral surface brown. Fore wing ochreous suffused with pale red-brown, the veins with dark streaks ; a white streak in submedian fold to beyond middle with black streak below it, diffused below and acutely angled inwards at

extremity; a white streak in discal fold from before middle to end of cell with black streak below it; slight black streaks beyond the cell above and below vein 5, some slight white striæ from terminal half of costa; dentate white marks from beyond middle to termen on each side of veins 6, 4, 3 and a white streak below vein 3 to below angle of cell, with diffused black marks above and between them, slightly defined by black on inner side below vein 5 and the streak with slight black streak on its lower edge, the extremities of veins 7 and 4 also defined by slight dentate white marks; a black terminal line interrupted by white streaks intersecting the cilia. Hind wing ochreous white, the terminal half tinged with pale red-brown; cilia ochreous white; the underside white, the costal and terminal areas broadly tinged with pale red-brown.

♀. Much whiter and with hardly any brown suffusion; fore wing with the black streaks slighter, the dentate marks on terminal area slightly defined by black.

Hab. Syria, 1 ♂, 1 ♀. *Exp.* ♂ 34, ♀ 36 millim.

*3767. ? Hypeuthina numida.

Hypeuthyna numida, Oberth. Ét. Ent. xiii. p. 27, pl. 6. f. 41 (1890); Staud. Cat. Lep. pal. p. 373.

Head and thorax brown; abdomen grey suffused with brown. Fore wing grey-brown; antemedial line double, brown, rather diffused, oblique from costa to submedian fold where it is angled outwards, then inwardly oblique; orbicular and reniform with brown centres and grey annuli defined by brown, the former round, the latter constricted at middle; a brown line from lower angle of cell to inner margin; postmedial line double, bent outwards and obsolescent below costa, excurved to vein 4, then incurved; postmedial area dark brown except towards costa; subterminal line only defined by the contrast between the postmedial and terminal areas, excurved below vein 7 and at middle, then incurved; a terminal series of black points. Hind wing grey tinged with brown.

Hab. Algeria, Magenta; Tunis, Kef. *Exp.* 36 millim. This species is unknown to me.

Genus **PSEUDOLIGIA**.

Type.

Pseudoligia, Staud. Cat. Lep. pal. p. 242 (1901) ..... *similiaria*.

Proboscis aborted, small; palpi porrect, extending to just beyond frons and fringed with hair below, the 3rd joint short; frons smooth; eyes large, round; antennæ of male ciliated; vertex of head with tuft of hair, thorax clothed with hair and scales mixed, the pro- and metathorax with spreading crests; tibiæ fringed with rather long hair, the fore tibiæ with long curved claw at extremity on inner side; abdomen with some rough hair at base but without crests. Fore wing long and narrow, the apex rounded, the termen obliquely curved and not crenulate; vein 3 from before angle of cell; 5 from just above angle, the upper angle produced; vein 6 from angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell to about one third.

3768. Pseudoligia similiaria.

Ligia similiaria, Mén. Mém. Ac. Imp. Sci. St. Pétersb. vi. p. 296, pl. 6. f. 12 (1849); Staud. Cat. Lep. pal. p. 242, & Add. p. 256.
Epimecia argiliacea, Christ. Rom. Mém. iii. p. 81, pl. 4. f. 6 (1887); Staud. Cat. Lep. pal. p. 154.

♂. Head and thorax white mixed with pale reddish brown and black; palpi with blackish marks at sides of joints; tibiæ at extremities and tarsi ringed with black; abdomen white tinged with brown. Fore wing grey-white suffused with reddish and fuscous brown and with some dark irroration, the veins with dark streaks, on terminal area with whitish streaks; subbasal and antemedial lines represented by oblique dark striæ from costa; the medial area with black streaks above and below submedian fold with a whitish mark between them representing the claviform; orbicular and reniform absent; postmedial line represented by an obscure oblique dark band from costa towards apex to inner

Fig. 24.—*Pseudoligia similiaria*, ♂. ½.

margin, diffused on inner side and dentate on outer, and with whitish suffusion beyond it from costa to vein 2; subterminal line faint, whitish, defined on inner side by slight dentate dark marks; a terminal series of black striæ defined on inner side by whitish marks; cilia white mixed with black at base and tips. Hind wing white, the veins brownish; a diffused brown discoidal lunule; the area beyond the cell irrorated with brown and with faint diffused subterminal band from costa to vein 2; a strong brown terminal line; the underside white with black discoidal spot and terminal line.

Hab. W. Turkestan, Turcomania, Tedshen Oasis (*Hauser*), 1 ♂, Bokhara. *Exp.* 40 millim.

Genus SCOTOCAMPA.

Type.
Scotocampa, Staud. Stett. ent. Zeit. 1888, p. 36 ..... *indigesta*.

Proboscis aborted, minute; palpi porrect, hardly extending beyond the frons, the 2nd joint fringed with long hair below, the 3rd short; frons with vertical ridge; eyes large, round; antennæ of male minutely serrate and with fascicles of long cilia; thorax clothed with hair and hair-like scales, the pro- and metathorax with spreading crests; tibiæ moderately fringed with hair, the fore tarsi with curved claw-like spines on 1st joint; abdomen with some rough hair at base, but without crests. Fore wing with the apex rounded, the termen obliquely curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

3769. Scotocampa indigesta.

Scotocampa indigesta, Staud. Stett. ent. Zeit. 1888, p. 36; id. Cat. Lep. pal. p. 212.

♂. Head and thorax white mixed with fuscous; antennæ white; tarsi ringed with black; abdomen white irrorated with fuscous. Fore wing white thickly irrorated with fuscous, the veins slightly streaked with white; a black streak below base of cell; faint traces of an oblique waved antemedial line; claviform a white streak defined by black at extremity and below and with faint black streak from it to subterminal line; orbicular and reniform absent; faint traces of a postmedial line bent outwards below costa and

Fig. 25.—*Scotocampa indigesta*, ♂. ½.

oblique below vein 4; subterminal line white, dentate, very indistinct from costa to vein 4, then more prominent, crossed by short black streaks in the interspaces, oblique below vein 3 and strongly angled inwards above and below vein 2; cilia fuscous intersected with white. Hind wing white; a small black discoidal lunule; the terminal area irrorated with fuscous forming obscure streaks in the interspaces; cilia white. Underside of both wings white with black discoidal lunules, the costal and terminal areas irrorated with fuscous.

Hab. W. Turkestan, Issyk Kul; E. Turkestan, Ili, Kungess, 1 ♂. *Exp.* 38 millim.

Genus LEIOMETOPON.

	Type.
Leiometopon, Staud. Stett. ent. Zeit. 1888, p. 37	*simyrides.*

Proboscis aborted; palpi porrect, projecting about the length of head and clothed with long hair, the 3rd joint short; frons with large rounded prominence; eyes large, round; antennæ laminate in both sexes; thorax clothed with rough hair and scales, the prothorax without distinct crest, the metathorax with large crest of rough scales; tibiæ clothed with rather long hair; abdomen with some rough hair at base but without crests. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base only.

3770. Leiometopon simyrides.

Leiometopon simyrides, Staud. Stett. ent. Zeit. 1888, p. 37; id. Cat. Lep. pal. p. 134.

♂. Head, thorax, and abdomen fuscous brown mixed with some white, the frons and base of tegulæ white. Fore wing grey thickly irrorated with reddish brown, the veins with slight brown streaks;

a broad white fascia in and below cell from base to the antemedial line, which is indistinct, diffused, minutely waved, oblique from costa to median nervure, then inwardly oblique and angled inwards on vein 1, then bent outwards to meet the postmedial line above inner margin; the end of cell and area beyond it to the postmedial line whitish; a small brown discoidal spot; postmedial line brown, minutely dentate, excurved from costa to vein 4, then strongly incurved, defined by whitish on outer side and bent inwards to the antemedial line above inner margin, some whitish beyond it above and below vein 5 and two small white spots on costa; subterminal line represented by obscure somewhat dentate brown marks on its inner side from vein 6 to inner margin, incurved below vein 3 and with brownish marks beyond it and above vein 2; a terminal

Fig. 26.—*Leiometopon simyrides*, ♂. ½.

series of brown striæ; cilia white with a dark brown line near base. Hind wing pale reddish brown; cilia whitish; the underside with the costal area and termen irrorated with white.

♀. Whiter; fore wing with black streak below the white fascia in submedian interspace, the white in lower end of cell and thence obliquely towards apex more prominent, the discal fold in end of cell defined above and below by brown streaks to the small discoidal spot.

Hab. E. Turkestan, Dscharkent, 1 ♂, Thian-Shán Mts., 1 ♀.
Exp. ♂ 36, ♀ 40 millim.

Genus **SIMYRA**.

	Type.
Simyra, Ochs. Schmett. Eur. iv. p. 81 (1816), non descr.; Treit. Schmett. Eur. (5) ii. p. 280 (1825)	*albovenosa.*
Arsilonche, Led. Noct. Eur. p. 70 (1857)	*albovenosa.*

Proboscis aborted, minute; palpi porrect, extending to beyond frons and clothed with long hair; frons smooth; eyes rather small, round; antennæ of male typically laminate; thorax clothed with hair only and without crests; tibiæ fringed with long hair; abdomen dorsally clothed with rough hair at base and with lateral fringes of hair but without crests. Fore wing with the apex somewhat produced and acute, the termen obliquely curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell or shortly stalked; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male bipectinate with moderate branches dilated at extremity.

A. Fore wing with the veins defined by slight brown streaks.

a. Fore wing with brown streak on median nervure and vein 4 from base to termen ..... *huettneri.*

b. Fore wing without brown streak on median nervure and vein 4 ..... *nervosa*.
B. Fore wing pure white, the veins not defined by streaks ..... *splendida*.

*3771. Simyra buettneri.

Arsilonche buettneri, Hering, Stett. ent. Zeit. 1858, p. 442, pl. 3; Staud. Cat. Lep. pal. p. 134.
Nonagria bloomeri, Hein. Schmett. Deutsch. i. p. 408 (1859).

Head, thorax, and abdomen ochreous white slightly irrorated with brown. Fore wing ochreous white irrorated with fuscous; the veins with dark streaks; diffused reddish fasciæ along median nervure and vein 4 from base to termen and above and below vein 1. Hind wing whitish faintly tinged with pink, the veins with dark streaks.

Hab. N. Germany, Pomerania; S. Russia, Taganrog. *Exp.* 30–32 millim. This species is unknown to me,

3772. Simyra nervosa.

Noctua nervosa, Schiff. Wien. Verz. p. 85 (1776); Fabr. Mant. Ins. ii. p. 139 (1787); Hübn. Eur. Schmett., Noct. f. 226; Frr. Neue Beitr. pl. 101; Dup. Lép. Fr. vii. p. 339, pl. 120. f. 8; Staud. Cat. Lep. pal. p. 134.
Noctua oxyptera, Esp. Schmett. iv. pl. 130. f. 6 (1788).
Simyra argentacea, Herr.-Schäff. Eur. Schmett., Noct. ff. 387–8 (1849).
Simyra torosa, Guen. Noct. i. p. 62 (1852).

Head, thorax, and abdomen white mixed with pale red-brown. Fore wing white suffused with red-brown and sparsely irrorated with black scales, the veins white defined by pale brown streaks especially on terminal area; costal edge pure white. Hind wing white suffused with pale reddish brown except at termen. Underside of fore wing white suffused with red-brown leaving the costa

Fig. 27.—*Simyra nervosa*, ♂. ½.

and inner and terminal areas white; hind wing suffused with red-brown leaving the costal area and terminal area to vein 2 white sparsely irrorated with brown.

Ab. 1. Fore wing white slightly tinged with red-brown; hind wing slightly suffused with red-brown along median nervure and beyond the cell.

Ab. 2. *argentacea*. Fore wing silvery white without any red-brown tinge; hind wing slightly suffused with brown in male, almost pure white in female.—S. Russia, W. & E. Turkestan.

Hab. Germany, Zeller & Leech Colls.; Austria; Hungary, Frey Coll.; Switzerland, Valais; N. Italy; S. Russia, Sarepta, Zeller & D'Emmick Colls.; ? Asia Minor, Pontus; W. Turkestan, Tarbagatai Mts., Issyk Kul, Ala Tau; W. Siberia, Altai; E. Turkestan, Ili, Korla; Mongolia, Urga. *Exp.* 32–42 millim.

Larva. Kirby, Butt. & Moths Eur. p. 161; Hffm. Raup. p. 73, pl. 21. f. 16.

Dark grey with yellowish hairs, whitish longitudinal lines and broad macular dorsal stripe. Food-plants: Spurge, Sorrel. 6.

3773. Simyra splendida.

Simyra splendida, Staud. Stett. ent. Zeit. 1888, p. 245; id. Rom. Mém. vi. p. 383, pl. 6. f. 1; id. Cat. Lep. pal. p. 134.
Simyra niveonitens, Græs. Berl. ent. Zeit. 1888, p. 309.

♂. Head and thorax pure white, the tegulæ faintly tinged with brown; branches of antennæ fulvous; tarsi tinged with brown; abdomen white with a few dark scales. Fore wing white irrorated with a very few brown scales, the veins slightly tinged with brown, the termen with ochreous. Hind wing pure white.

Ab. 1. Hind wing suffused with brown leaving the termen and cilia white.

Hab. W. Turkestan, Tedschen Oasis (*Hauser*), 1 ♂; E. Turkestan, Ili; Tibet, Amdo; E. Siberia, Ussuri; Corea. *Exp.* 36 millim.

Sect. II. Antennæ of male bipectinate with very short branches.

3774. Simyra dentinosa.

Noctua dentinosa, Frr. Neue Beitr. iii. p. 97, pl. 263. ff. 2, 3 (1839); Dup. Lép. Fr., Suppl. iii. p. 479, pl. 41. f. 4; Staud. Cat. Lep. pal. p. 134.
Symira tendinosa, Herr.-Schäff. Eur. Schmett. ii. p. 179, Noct. ff. 393–4 (1845).
Cucullia leucaspis, F. de Wald. Bull. Mosc. 1840, p. 84, pl. 3. f. 2.

Head and thorax white suffused with red-brown leaving the dorsum of thorax and the patagia whiter; palpi red-brown except at base; patagia with black streaks on outer edges; abdomen white mixed with pale fuscous and some rufous hair at base. Fore wing white, the area below the cell suffused with reddish brown to post-medial line, the veins slightly streaked with brown; antemedial line brown with dark spot at costa, inwardly oblique, and slightly excurved at inner margin, a slight brown spot in end of cell; post-medial line very indistinct, double, oblique from costa to vein 7, then dentate, very oblique from vein 4 to submedian fold, then angled outwards on vein 1 on which there is a whitish dentate mark before it, some brown suffusion beyond it on costa with whitish points on it and brown streaks from it to termen below apex and at vein 5; the interspaces of terminal area with diffused brown streaks; cilia red-brown at base, white at tips. Hind wing white, the base suffused with red-brown; a slight discoidal point

and traces of a curved diffused postmedial line; the underside with the discoidal spot and postmedial line more distinct.

Hab. Bulgaria; Russia, Sarepta (*Christoph*), Zeller & Leech Colls.; Armenia, 1 ♂, 1 ♀; Kurdistan, Malatia; Asia Minor, Pontus, 1 ♂, Bithynia; Palestine; Persia; W. Siberia. *Exp.* 36–40 millim.

Larva. Kirby, Butt. & Moths Eur. p. 161; Hffm. Raup. p. 73.

Green, the segmental incisions yellow; head black. Food-plant: *Euphorbia.* 5–6, gregarious.

Sect. III. Antennæ of male laminate.

A. Fore wing with more or less prominent dark streaks below base of cell and above and below vein 5.
  a. Fore wing acutely produced at apex, the irroration and streaks bright red-brown ..... *henrici.*
  b. Fore wing less produced at apex, the irroration and streaks darker brown.
    a^1. Fore wing with the veins of terminal area defined by slight brown streaks..... *colorada.*
    b^1. Fore wing with the veins of terminal area not defined by brown streaks.
      a^2. Hind wing white..... *albovenosa.*
      b^2. Hind wing ochreous grey ..... *sæpistriata.*
B. Fore wing without dark streaks below base of cell and above and below vein 5.
  a. Fore wing nearly uniform rufous, the costal edge white... *albicosta,*
  b. Fore wing with the costal edge not white.
    a^1. Fore wing pale rufous thickly irrorated with rufous... *confusa.*
    b^1. Fore wing ochreous white sparsely irrorated with rufous..... *conspersa.*

3775. Simyra henrici. (Plate CXXVII. fig. 13.)

Leucania henrici, Grote, Bull. Buff. Soc. Nat. Sci. i. p. 10 (1873); Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 175, pl. x. f. 7; Smith, Cat. Noct. N. Am. p. 34.
Leucania evanida, Grote, Bull. Buff. Soc. Nat. Sci. i. p. 10 (1873).
Ablepharon fumosum, Morr. Bull. Buff. Soc. Nat. Sci. i. p. 275 (1873).

Head, thorax, and abdomen white faintly tinged with red-brown. Fore wing white faintly tinged and irrorated with red-brown, the veins of teminal half faintly defined by slight rufous streaks; a pale rufous fascia from above median nervure at origin of vein 2 to near termen above vein 4, a slight fascia in submedian fold from base to beyond middle and a slight fascia above vein 7. Hind wing silvery white.

Ab. 1. *fumosa.* Almost entirely suffused with slate-grey.

Hab. Canada, Ottawa (*Gibson, Saunders*), 2 ♂, 1 ♀; U.S.A., Massachusetts, New York, 3 ♂, 1 ♀, type and type *evanida*, Kansas, California, New Mexico, Albuquerque (*Oslar*), 2 ♀, Roswell (*Cockerell*), 1 ♀; Cuba, 1 ♂, Grote Coll. *Exp.* 36–46 millim.

Larva. Smith & Dyar, Pr. U.S. Nat. Mus. xxi. p. 176.

Larva. Head shining black, marked with white above mouth, a V-mark over clypeus, a band on vertex of each lobe and on sides.

Body cylindrical, black, dotted with yellow; a yellow subdorsal line and a more sharply defined substigmatal one. Warts raised, light red, bearing tufts of short pale hair. Food-plant: Grass.—H. G. D.

3776. Simyra colorada. (Plate CXXVII. fig. 14.)

Arsilonche colorada, Smith, Pr. U.S. Nat. Mus. xxii. p. 414 (1900); Dyar, Cat. Lep. N. Am. p. 105.

♂. Head and thorax pale grey tinged with reddish brown; palpi fuscous except at base; antennæ fuscous except upper side of shaft; abdomen grey tinged with brown at base and fuscous at extremity. Fore wing grey-white slightly tinged with brown, the costal area slightly irrorated with brown; the veins of terminal area defined by slight brown streaks, the discal fold from middle of cell and the submedian fold with rather stronger brown streaks; cilia white slightly tinged with fuscous. Hind wing white faintly tinged with brown.

Hab. U.S.A., Colorado, Denver, 1 ♂, Glenwood Springs. *Exp.* 34 millim.

3777. Simyra albovenosa.

Noctua pallens, Sepp, Ins. Ned. ii. pt. 3, p. 11, pl. 3. ff. 1–9 (1777), nec Linn.
Noctua albo-venosa, Goeze, Ent. Beytr. iii. 3, p. 251 (1781); Staud. Cat. Lep. pal. p. 134.
Noctua venosa, Borkh. Eur. Schmett. iv. p. 716 (1792); Dup. Lép. Fr. vii. p. 343, pl. 120. f. 7; Frr. Neue Beitr. pl. 410; Steph. Ill. Brit. Ent., Haust. iii. p. 82.
Noctua degener, Sepp, Ins. Ned. iv. corrigenda, nec Schiff.; Hübn. Eur. Schmett., Noct. f. 380 (1808).
Noctua atomima, Haw. Lep. Brit. p. 175 (1809).
Simyra centripuncta, Herr.-Schäff. Neue Schmett. p. 4, ff. 24, 25 (1856).
Arsilonche flavida, Auriv. Ent. Tids. 1880, p. 38.
Arsilonche murina, Auriv. Ent. Tids. 1880, p. 37, pl. i. f. 2.
Arsilonche albida, Auriv. Ent. Tids. 1880, p. 38.
Arsilonche ochracea, Tutt, Entom. 1888, p. 99.
Arsilonche argentea, Tutt, Entom. 1888, p. 100.
Arsilonche tristis, Bang-Haas, Iris, 1907, p. 70.

Head and thorax white tinged with pale rufous; abdomen white. Fore wing white tinged with pale rufous and slightly irrorated

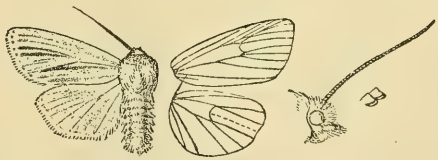


Fig. 28.—*Simyra albovenosa*, ♂. ½.

with brown; traces of a dark streak in basal half of submedian fold and of a brownish streak above vein 4 from lower angle of cell

to termen; a terminal series of black points from apex to vein 3. Hind wing pure white.

Ab. 1. *centripuncta*. Fore wing with black point at lower angle of cell.—Dalmatia, Russia.

Ab. 2. *flavida*. Fore wing yellowish.

Ab. 3. *albida*. Fore wing with the ground-colour white.

Ab. 4. *murina*. Head, thorax, and fore wing deep red-brown, the veins streaked with white; hind wing with the terminal area suffused with brown leaving white streaks on the veins.—Dalmatia, Sweden.

Hab. Britain Leech Coll.; France, Sand Coll.; Germany, Zeller, Frey, and Leech Colls.; Austria; Hungary; Switzerland; Dalmatia; Sweden, 1 ♂, 1 ♀; Finland; Russia; E. Turkestan, Ili. *Exp.* 30–42 millim.

Larva. Meyr. Brit. Lep. p. 144; Barrett, Lep. Brit. iii. p. 275, pl. 123. f. 3.

Blackish or dark grey-brown with pale marblings; subdorsal and spiracular lines pale ochreous yellow often marked with red, the tubercles on them yellow or orange; fascicles of pale reddish-brown and black hairs; head black streaked with ochreous. Food-plants: *Phragmites*, *Carex*, *Typha*. 8–9.

*3778. Simyra sæpistriata.

Arsilonche sæpistriata, Alph. Iris, viii. p. 188 (1895).

♀. Head, thorax, and abdomen white suffused in parts with brown. Fore wing white with broad brown streaks in the interspaces. Hind wing uniform ochreous grey.

Hab. Mongolia, Urga. *Exp.* 40 millim. This species is unknown to me.

3779. Simyra albicosta, n. sp. (Plate CXXVII. fig. 15.)

♀. Head and thorax white, the head, tegulæ, prothorax, front of pectus, and legs suffused with rufous; abdomen white tinged with red-brown. Fore wing rufous, the costal edge white, the median nervure and veins of terminal half slightly streaked with white; a white spot at base of costa; cilia white at tips. Hind wing white faintly tinged with red-brown; cilia white.

Hab. Madras, Nilgiris, 1 ♀ type. *Exp.* 40 millim.

3780. Simyra confusa.

Leucania confusa, Wlk. ix. 105 (1856); Moore, Lep. Ceyl. iii. p. 9, pl. 145. f. 4; Hmpsn. Moths Ind. ii. p. 285.

Head and thorax white tinged with rufous; abdomen white, the extremity and ventral surface tinged with rufous. Fore wing pale rufous slightly irrorated with brown, sometimes with two slight brown striæ on discocellulars and one beyond upper angle of cell; cilia white faintly tinged with rufous. Hind wing white faintly

tinged with ochreous; the underside with the costal area suffused with pale rufous.

Hab. Ceylon (*Templeton*), 4 ♂ type, Puttalam (*Pole*), 1 ♀. *Exp.* 30–38 millim.

3781. Simyra conspersa. (Plate CXXVII. fig. 16.)

Simyra conspersa, Moore, P. Z. S. 1881, p. 340; Hmpsn. Moths Ind. ii. p. 286.

Head and thorax ochreous white slightly irrorated with brown; abdomen white. Fore wing ochreous white thickly and evenly irrorated with reddish brown, usually with two slight brown striæ on discocellulars and one beyond upper angle of cell. Hind wing white; the underside with the costal area tinged with ochreous.

Hab. Punjab, Manpuri, 1 ♀ type; Sikhim, 1 ♂; Bengal, Calcutta, 1 ♂, 2 ♀; Centr. Provinces, Raipur (*Betham*), 1 ♀. *Exp.* 30–42 millim.

Genus EOGENA.

	Type.
Eogena, Guen. Noct. i. p. 340 (1852)	*contaminei.*

Proboscis absent; palpi porrect, extending to just beyond frons, the 2nd joint fringed with long hair below; frons smooth, with tuft of hair; eyes large, round; antennæ of male laminate; thorax clothed with hair only and without crests; tibiæ fringed with long hair; abdomen with some rough hair at base but without crests. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

3782. Eogena contaminei.

Noctua contaminei, Ev. Bull. Mosc. 1847, iii. p. 77, pl. 5. f. 6; Staud. Cat. Lep. pal. p. 134.
Cosmia bombycina, Mén. Mém. Acad. Imp. Sci. St. Pétersb. vi. p. 285, pl. 6. f. 7 (1848).
Noctua eogene, Frr. Neue Schmett. vi. p. 53, pl. 514 (1852).

Head and thorax bright pink; antennæ fulvous, white at base;

Fig. 29.—*Eogena contaminei*, ♂. ½.

pectus white behind; abdomen brownish with some white hair at base, the lateral and anal tufts and ventral surface pale pink.

Fore wing bright pink tinged with greyish, the costal area rather deeper except towards base, the base of inner margin whitish; a pink antemedial line slightly bent inwards to costa, obsolescent and slightly sinuous on inner area; orbicular a pink point, the reniform an ill-defined pink lunule; postmedial line indistinctly double, slightly bent outwards below costa, then minutely waved, excurved to vein 4, then incurved; cilia with a fine pink line through them. Hind wing pinkish white suffused with brown especially on terminal area; traces of a curved postmedial line; cilia ochreous white; the underside brownish white, the costal area tinged with pink, an indistinct discoidal spot and curved postmedial line.

Ab. 1. Hind wing pale pink, the terminal area rather darker and without brown tinge.

Hab. S. Russia, Sarepta (*Christoph*), Zeller, Frey, Leech, and D'Emmick Colls. *Exp.* 36–44 millim.

Larva. Kirby, Butt. & Moths Eur. p. 162; Hffm. Raup. p. 74.

Pale ochreous striated and speckled with dark brown, a broad rufous dorsal stripe, black on front of each somite and interrupted on posterior part; warts rufous; stigmata white ringed with black; head rufous. Food-plant: *Statice gmelini*.

Genus **CALOPHASIDIA**, nov.

Type, *C. lucala*.

Proboscis fully developed; palpi porrect, extending to well beyond frons and thickly scaled, the 3rd joint short; frons with corneous prominence with raised edges and central vertical ridge; eyes large, round; antennæ of male bipectinate with moderate branches to near apex; thorax thickly clothed with hair and hair-like scales and without crests; fore tibiæ with curved claw at extremity on inner side, the mid and hind tibiæ moderately fringed with hair; abdomen without crests. Fore wing long and narrow, the apex rounded, the termen obliquely curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of female with short branches; frontal prominence with the central process short.

3783. **Calophasidia lucala.**

Megalodes lucala, Swinh. A. M. N. H. (7) ix. p. 168 (1902).

♂. Palpi and frons black-brown slightly mixed with grey, vertex of head grey, antennæ red-brown; thorax black-brown, the outer part of tegulæ and the patagia except upper edges white; pectus white tinged with brown; the greater part of legs black-brown, the tarsi ringed with white; abdomen white dorsally tinged with rufous and with slight dark bands at base. Fore wing white, the costa black-brown, narrowing to base and expanding somewhat towards apex, the inner area suffused with brown with a diffused dark antemedial patch, vein 1, the median nervure and

the veins of terminal area with dark streaks; subbasal and antemedial lines and the stigmata absent; postmedial line obsolete except below vein 3 where it is rather strong and very oblique, a dark patch beyond it from below vein 3 to submedian fold and

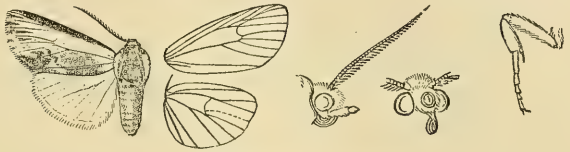


Fig. 30.—*Calophasidia lucala*, ♂. ½.

another dark patch beyond it on termen; the interspaces of terminal area with dark streaks, longer above and below vein 5; cilia white mixed with dark brown, black-brown towards tornus. Hind wing pure white.

♀. Hind wing with the veins tinged with brown, the termen suffused with brown.

Hab. W. Australia, Sherlock R. (*Clements*), 1 ♂, 1 ♀ type. *Exp.* ♂ 38, ♀ 40 millim.

Sect. II. Antennæ of female ciliated; frontal prominence with the central process long with oblique edge.

A. Fore wing with the ante- and postmedial lines connected by a diffused dark fascia in submedian fold ..... *radiata.*
B. Fore wing with the antemedial line angled outwards to the postmedial line in submedian fold ..... *dentifera.*

3784. Calophasidia radiata.

Megalodes radiata, Swinh. A. M. N. H. (7) ix. p. 168 (1902).

♂. Head and thorax white; palpi, frons, and antennæ tinged with brown; tegulæ irrorated with dark brown; vertex of thorax streaked with dark brown, the metathorax mostly dark brown;

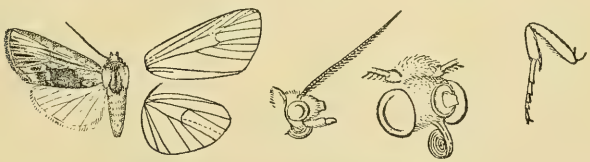


Fig. 31.—*Calophasidia radiata*, ♂. ½.

legs tinged with brown, the tarsi fuscous ringed with white; abdomen white dorsally tinged with rufous. Fore wing white irrorated with brown especially on costal, inner and terminal areas, the median nervure and veins of terminal area with slight dark streaks; antemedial line represented by a dark spot on costa and a diffused black-brown line from just below middle of median

nervure, oblique to vein 1, then angled outwards above inner margin on which there is a dark mark before it, a diffused dark streak in submedian fold from it to postmedial line, which is obsolete to vein 2, then incurved and slightly angled outwards on vein 1; some ferruginous suffusion in submedian interspace before the antemedial and beyond the postmedial line; stigmata absent; traces of a medial shade on inner area: some brownish suffusion from lower angle of cell to termen; subterminal line represented by an oblique series of short dark streaks from below vein 6 to above 2 and a dark mark on outer edge of some ferruginous suffusion in submedian fold; cilia grey mixed with brown. Hind wing pure white.

♀. Hind wing suffused with brown except basal area.

Hab. W. Australia, Sherlock R. (*Clements*), 5 ♂, 4 ♀ type. *Exp.* 24–30 millim.

3785. **Calophasidia dentifera**, n. sp. (Plate CXXVII. fig. 17.)

♀. Head and thorax white thickly irrorated with black-brown; tarsi with slight pale rings; abdomen whitish tinged with brown. Fore wing violaceous white thickly irrorated with dark brown, the median nervure and veins of terminal area with slight dark streaks; antemedial line represented by a dark mark on costa and a strong black-brown line from median nervure angled outwards to postmedial line in submedian fold, then strongly retraced to vein 1 and angled outwards above inner margin on which there is a dark mark before it; postmedial line obsolete to vein 3, then oblique, slightly incurved and irregular, an irregular dark bar beyond it; the terminal area with dark streaks above veins 5, 4, 3, the two lower extending nearly to cell; a slight dark terminal line; cilia mixed grey and brown. Hind wing white tinged with brown except towards base; cilia white.

Hab. W. Australia (*Clements*), 1 ♀ type. *Exp.* 28 millim.

Genus **CETOLA**.

Type.

Cetola, Wlk. v. 1015 (1855) ..... *dentata*.

Proboscis aborted, minute; palpi oblique, moderately scaled and reaching to just beyond frontal tuft; frons with truncate conical prominence with raised edges containing a large tuft of hair; eyes large, round; antennæ of male bipectinate with short branches to apex, of female typically with shorter branches; a ridge of scales between antennæ; thorax clothed with rough hair and scales, the pro- and metathorax with large spreading crests; tibiæ moderately fringed with hair; abdomen with dorsal crests on basal segments, the crests on 2nd and 3rd segments large. Fore wing with the apex rounded, the termen and cilia strongly dentate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 rather strongly developed from well above angle; 6, 7 shortly stalked; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of female shortly pectinated.

A. Fore wing with crimson suffusion on costal area to beyond middle ..... *rubricosta.*
B. Fore wing with fuscous suffusion on costal area to beyond middle ..... *dentata.*

3786. Cetola rubricosta. (Plate CXXXII. fig. 32.)

Cetola rubricosta, Hmpsn. J. Bomb. Soc. Nat. Hist. xvii. p. 658 (1907).

♂. Head rufous; tegulæ and dorsum of thorax fuscous mixed with some grey; patagia ochreous white tinged with rufous; pectus and legs rufous; abdomen ochreous white suffused in parts with rufous and dorsally with fuscous and grey. Fore wing ochreous white tinged with pinkish towards base, the costal area suffused with crimson to beyond middle, extending to middle of cell and with black-brown patch towards apex, a brownish fascia on inner margin except towards base; subbasal line indistinct, dark, very highly dentate, from costa to submedian fold; antemedial line very indistinct, double filled in with whitish, highly dentate; orbicular tinged with crimson and defined by black except below, rather elongate elliptical; reniform white faintly tinged with crimson, defined by black above and by olive-brown suffusion below, its upper extremity produced and its lower forming a lobe; the veins beyond the cell with slight olive streaks; postmedial line indistinct, whitish, bent outwards below costa, oblique below vein 4 and angled inwards in submedian fold, some white points beyond it on the blackish costal patch; subterminal line represented by a whitish striga from costa, an oblique olive shade from termen below apex to discal fold, intersected by a white streak below vein 7 and with a slight black streak below it, an oblique olive shade from termen below vein 5 to submedian fold with slight blackish streaks on it and an olive shade at tornus; cilia white with some olive at origin of the oblique shade and two brown striæ at tornus. Hind wing semihyaline white with some brownish ochreous on inner area and a brown mark on costa at apex; the underside with terminal series of black points from apex to submedian fold.

Hab. Ceylon, N. C. Province (*Pole*), 1 ♂ type. *Exp.* 46 millim.

3787. Cetola dentata.

Cetola dentata, Wlk. v. 1016 (1855); Hmpsn. Moths Ind. ii. p. 434.
Ramesa ligniferata, Wlk. xxxii. 415 (1865).

♂. Head, tegulæ, and patagia ochreous mixed with some rufous; vertex of thorax and abdomen chocolate-brown, the latter ochreous at extremity; pectus and legs chocolate-brown. Fore wing ochreous tinged with rufous especially along median nervure and thence to termen and on inner margin except at base; the costal area fuscous brown mixed with some grey, becoming chocolate-brown towards apex; antemedial line represented by a curved

black striga in cell; orbicular with pale annulus defined by black at sides only, large, round; reniform whitish suffused with rufous above and defined by black on inner side and above, its upper extremity produced and forming a lobe below; the inner margin with fine chocolate-brown streak from below middle to tornus; chocolate-brown streaks beyond upper angle of cell above veins 7, 6; postmedial line represented by very faint double oblique streaks

Fig. 32.—*Cetola dentata*, ♂. ½.

below veins 3 and 2; some whitish points on postmedial part of costa; the veins of terminal area with fine dark streaks; a short streak above extremity of vein 4; double chocolate-red striæ on termen in submedian interspace; cilia with a chocolate-red line through them. Hind wing semihyaline white, the termen slightly tinged with red; the underside with the costa red-brown towards apex, a brown discoidal lunule and terminal series of slight lunules.

♀. Fore wing suffused with rufous; hind wing red-brown, the termen and cilia rufous; the underside with curved postmedial line and diffused subterminal band.

Hab. Punjab, Almorah (*Boys*), 4 ♀ type *ligniferata*, Deyra Dhun, 2 ♂; Nepaul, 1 ♂ type. *Exp.* ♂ 38–42, ♀ 46–48 millim.

Sect. II. Antennæ of female almost simple.

3788. **Cetola radiata**, n. sp.

♀. Head, thorax, and abdomen ochreous tinged with rufous and mixed with deep chocolate-red. Fore wing deep chocolate-red, the

Fig. 33.—*Cetola radiata*, ♀. ½.

inner area ochreous tinged with rufous; an ochreous fascia tinged with rufous from end of cell to termen and another oblique fascia

from end of cell to apex, leaving a wedge-shaped chocolate patch between them from termen below apex intersected by an ochreous streak below vein 7; a fine black streak on inner margin from before middle to tornus; some grey suffusion in cell; orbicular and reniform large, with rufous centres and grey annuli defined by black except above, the former round, the latter with its upper extremity produced and its lower part forming a lobe below the cell; a blackish streak along vein 4 and short black streaks in the interspaces below costa towards apex; cilia chequered ochreous and rufous mixed with some blackish. Hind wing dark fuscous brown, the cilia ochreous mixed with fuscous; the underside irrorated with some yellowish white especially on costal area.

Hab. Natal, Durban (*Clarke*), 1 ♀ type. *Exp.* 50 millim.

Genus **MATOPO**.

	Type.
Matopo, Dist. A. M. N. H. (7) i. p. 227 (1898)	*typica.*

Proboscis fully developed; palpi obliquely upturned, the 2nd joint reaching about to middle of frons and moderately scaled, the 3rd short, porrect; frons with large rounded prominence with corneous plate below it; eyes large, round; antennæ of male typically bipectinate with rather long branches, the apex simple; thorax clothed chiefly with scales, the pro- and metathorax with spreading crests; tibiæ moderately fringed with hair; abdomen with dorsal crest at base only. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male bipectinate with rather long branches, the apex simple, of female with shorter branches.

A. Fore wing with the reniform figure-of-eight shaped and interrupted at middle	*nigrivittata.*
B. Fore wing with the reniform lunulate.	
a. Fore wing with the orbicular extremely elongate and narrow.	
a^1. Fore wing with the postmedial line angled inwards in submedian fold.....	*inangulata.*
b^1. Fore wing with the postmedial line incurved in submedian interspace.....	*typica.*
b. Fore wing with the orbicular elliptical.....	*actinophora.*

3789. **Matopo nigrivittata.** (Plate CXXVII. fig. 18.)

Matopo nigrivittata, Hmpsn. Ann. S. Afr. Mus. ii. p. 291 (1902).

Head and tegulæ grey; palpi, frons, and antennæ black-brown; thorax mixed fuscous, brown and grey; legs fuscous, the tarsi ringed with white; abdomen fuscous brown. Fore wing grey-brown; a rufous fascia through the cell to postmedial line, then narrowing to termen above vein 4, with a diffused black fascia below

it from orbicular; submedian interspace rufous to near termen, the veins with slight dark streaks; antemedial line represented by slight whitish points on the veins; orbicular whitish defined by black, small, round; reniform whitish defined by black, bisected by the rufous fascia, the upper part small and triangular, the lower large and semicircular; postmedial line obsolete towards costa, then represented by a series of whitish points on the veins, oblique below vein 4; the terminal area with slight white streak above vein 4; cilia fuscous. Hind wing whitish tinged with fuscous brown.

Hab. Mashonaland, Salisbury (*Marshall, Dobbie*), 8 ♂; Transvaal (*Pead*), 1 ♀. *Exp.* 30 millim.

3790. **Matopo inangulata**, n. sp. (Plate CXXVII. fig. 19.)

♂. Head and thorax pale rufous; sides of palpi and frons brownish; antennæ brown; tegulæ with brown lines at middle and tips; tarsi black ringed with whitish; abdomen rufous dorsally suffused with brown. Fore wing ochreous suffused with rufous and with a brown shade below the cell and from lower angle of cell obliquely to termen below apex, the veins towards apex with dark streaks defined on each side by white, also the median nervure and veins 4, 3, and 1; a black streak below the cell from near base confluent with the lower edge of the narrow elongate claviform which is defined by black; a black streak above inner margin before the antemedial line, which extends from claviform to inner margin, incurved, then strongly angled outwards above inner margin; orbicular very narrow and elongate, defined by brown and with brown streak in middle, somewhat expanding at extremity; reniform a small lunule defined at sides by blackish and with brown line on discocellulars; postmedial line almost obsolete towards costa, bent outwards below costa and excurved to vein 6, below vein 6 black defined by rufous and ochreous on outer side, incurved at discal fold, very oblique from vein 4 to submedian fold, then slightly angled outwards on vein 1, some slight pale points beyond it on costa; the terminal area with black streaks above veins 6, 5, 3, extending to postmedial line; a terminal series of black points produced to short streaks; cilia red-brown and blackish intersected by white at the veins. Hind wing pure white with slight rufous terminal line; the cilia tinged with rufous towards apex; the underside with the costal area slightly tinged with rufous.

Hab. Rhodesia, Bulawayo (*Marshall*), 1 ♂ type. *Exp.* 36 millim.

3791. **Matopo typica.**

Matopo typica, Dist. A. M. N. H. (7) i. p. 227 (1898).

♂. Head and tegulæ whitish mixed with red-brown; palpi blackish above; antennæ brown, the tegulæ with black medial line and brown tips; thorax blackish and brown mixed with some white; pectus and legs mostly brown, the tarsi black ringed with

white; abdomen white slightly tinged with brown, the anal tuft blackish. Fore wing dark blue-grey, the costal area and cell whitish suffused with rufous to beyond middle, the veins black defined on each side by white; a black streak in base of submedian fold and an oblique streak above inner margin before the antemedial line, which is obsolete to submedian fold, then double filled

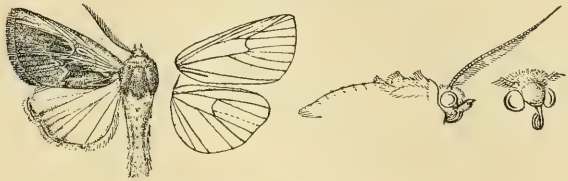


Fig. 34.—*Matopo typica*, ♂. ½.

in with pale rufous and very strongly angled outwards above inner margin; claviform very narrow and defined by black, extending to the postmedial line; orbicular whitish defined by brown and with brown streak in middle, very narrow and elongate, expanding at extremity and touching the reniform, which is a small whitish lunule tinged with rufous and defined by black; the white streaks defining the veins only extending to termen on costal area and at vein 4; postmedial line represented by a faint pale striga from costa and below vein 6 by a black line defined by rufous and whitish on outer side, below vein 4 very strongly incurved to below end of cell, excurved at vein 1 and bent outwards to inner margin; some pale points on costa towards apex; the interspaces of terminal area with black streaks, above veins 3 and 2 extending to postmedial line; cilia black slightly intersected by white at the veins. Hind wing pure white; the veins of terminal half slightly tinged with brown; the termen and cilia suffused with fuscous brown except towards tornus, emitting a diffused streak inwards on vein 6; the underside with the costal and apical areas slightly tinged with red-brown.

♀. Fore wing with a broad band of brownish ochreous lunulate markings beyond the postmedial line; hind wing grey-brown.

Hab. Transvaal (*Pead*), 2 ♂, 1 ♀, White R. (*Cooke*), 1 ♂; Basutoland, Maseru (*Crawshay*), 1 ♂; Cape Colony, Annshaw (*Miss F. Barrett*), 1 ♂, Transkei (*Miss F. Barrett*), 1 ♀. *Exp.* 38–40 millim.

3792. **Matopo actinophora**, n. sp. (Plate CXXVII. fig. 20.)

♂. Head and thorax ochreous mixed with red-brown; tegulæ with dark brown lines at middle and near tips; tarsi red-brown ringed with white; abdomen white slightly tinged with red-brown. Fore wing white tinged and in parts suffused with red-brown; the veins black defined on each side by white; subbasal line black, angled outwards in cell and ending at submedian fold; antemedial

line double filled in with ochreous, slightly excurved below costa, angled outwards in submedian fold and above inner margin angled outwards almost to postmedial line; claviform narrow and elongate, faintly defined by black; orbicular with brown and fuscous centre and whitish annulus defined by black, inwardly oblique elliptical; reniform with brown centre and whitish annulus defined by black; postmedial line double filled in with whitish, the inner line black, the outer rufous, inwardly oblique at costa, below costa very strongly bent outwards and almost obsolete, then excurved to vein 6, then slightly bent inwards and sinuous, below vein 4 very oblique to submedian fold, with a band of rufous suffusion before it from vein 6 to inner margin with diffused fuscous line on its inner side below vein 3; some slight pale points on costa towards apex; the interspaces of terminal area with short black streaks, above vein 6 extending almost to postmedial line; cilia brown intersected with white at the veins. Hind wing pure white; the underside with the costa slightly tinged with rufous.

♀. Hind wing fuscous brown, paler towards base, the cilia white.

Hab. Br. E. Africa, Athi-ya-Mawe (*Betton*), 5 ♂, 1 ♀ type, Nairobi (*Crawshay*), 1 ♀, Kilima-'njaro (*Hannington*), 1 ♀. *Exp.* 28–38 millim.

Sect. II. Antennæ of male minutely serrate, of female ciliated.

A. Fore wing with broad pale subcostal fascia..... *selecta.*
B. Fore wing with the costal half whitish .... *hemileuca.*

3793. Matopo selecta.

Xylophasia selecta, Wlk. xxxii. 646 (1865).
Calophasia lobifera, Moore, P. Z. S. 1881, p. 358; Hmpsn. Moths Ind. ii. p. 572.

♂. Head and thorax ochreous mixed with brown; palpi, frons, and antennæ brown; tegulæ with brown medial line; tarsi with whitish rings; abdomen ochreous white dorsally suffused with brown. Fore wing ochreous white suffused with reddish brown, the inner medial area greyish, the veins of terminal half with dark streaks defined on each side by white; subbasal line represented

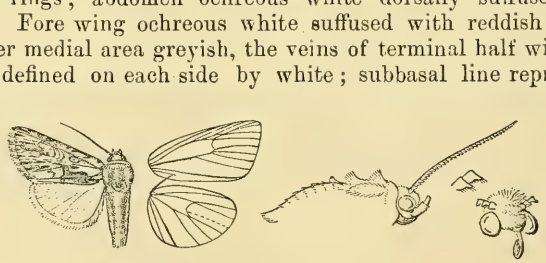


Fig. 35.—*Matopo selecta*, ♂. ½.

by a black point on costa; a dark mark above inner margin before the antemedial line, which is represented by a black point on costa and line from claviform to inner margin; the claviform very elongate, ochreous strongly defined by black except the basal part above;

orbicular slightly defined by blackish, somewhat elongate elliptical; reniform slightly defined by blackish at sides only and with blackish line on discocellulars; postmedial line very strongly bent outwards below costa, oblique to vein 6, then slightly incurved and below vein 4 very strongly incurved, some brown suffusion before it at discal fold and from vein 3 to inner margin, some white points beyond it on costa; an oblique brown shade from termen below apex to postmedial line; a subterminal series of short black streaks in the interspaces between veins 7 and 2 on brownish marks and a brown line from vein 2 to inner margin; a series of small black streaks in the interspaces from termen; cilia brown intersected with whitish at the veins. Hind wing white; the veins of terminal half and the terminal area towards apex and below vein 2 tinged with brown; the underside with the costal area irrorated with brown.

♀. Hind wing fuscous brown, paler towards base, the cilia white.

Hab. Egypt (*Armstrong*), 1 ♀; Punjab, 1 ♀ type, Mean Meer (*Harford*), 4 ♀; Bombay (*Swinhoe*), 3 ♀ type *lobifera*; Madras, Cuddapah (*Campbell*), 1 ♂, 2 ♀. *Exp.* 32–36 millim.

3794. **Matopo hemileuca**, n. sp. (Plate CXXVII. fig. 21.)

♀. Head and thorax black-brown; antennæ ochreous white; abdomen ochreous white, the basal crest brown, the ventral surface suffused with brown. Fore wing with the costal half ochreous white tinged with red-brown to just below cell and vein 4, the inner half fuscous brown to postmedial line, the postmedial area ochreous white tinged with rufous and the terminal area pale brown except at apex; a diffused black streak in basal half of submedian fold; traces of a dark antemedial line on inner area; orbicular absent; reniform ochreous white confluent with the costal area, its rounded lower part defined by a triangular black mark in cell on its inner side and by a blackish streak from its outer side to postmedial line, which is indistinct, oblique, dentate, from vein 6 to inner margin; a minutely waved subterminal line from vein 7 to inner margin, slightly angled inwards in submedian fold. Hind wing white, the apical area tinged with brown; the underside with the costal area tinged with brown.

Hab. Sierra Leone (*Mitford*), 1 ♀ type. *Exp.* 34 millim.

Sect. III. Antennæ of male almost simple and somewhat thickened.

*3795. **Matopo neotropicalis.**

Matopo neotropicalis, D. Jones, Trans. Ent. Soc. 1908, p. 163.

♂. Head and thorax glossy black, the vertex of head and base of tegulæ with some ochreous; front of pectus and fore legs blackish, mid and hind legs fuscous brown; abdomen white irrorated

with fuscous. Fore wing whitish almost wholly tinged with pale rufous, the antemedial area irrorated with a few black scales, the terminal half of costal area suffused with fuscous; subbasal and antemedial lines and orbicular absent; an indistinctly double medial line, black towards costa and below vein 2, reddish at middle and excurved at median nervure, with a faint reddish line beyond it

Fig. 36.—*Matopo neotropicalis*, ♂. ½.

from lower angle of cell to inner margin; reniform represented by a faint whitish lunule defined by reddish; traces of a minutely waved whitish postmedial line excurved to vein 4, then incurved; the veins and interspaces of terminal area with dark streaks, the interspaces between veins 4 and 2 with double streaks meeting towards base so as to form elongate V-shaped marks; a terminal series of black points with streaks beyond them intersecting the cilia, which are brown and white. Hind wing pure white; the underside with the costal edge dark brown.

Hab. Brazil, Castro Paraña, type † ♂ in Coll. D. Jones. *Exp.* 34 millim.

Genus **DELTA.**

	Type.
Delta, Saalm. Lep. Madag. p. 263 (1891)	*stolifera.*
Trichorhiza *, Hmpsn. Cat. Lep. Phal. B. M. v. p. 13 (1905)	*petersoni.*

Proboscis fully developed; palpi obliquely porrect, reaching to just beyond frons, the 2nd joint rather broadly fringed with hair below, the 3rd short; frons smooth, with ridges of hair at middle and above; eyes large, round; antennæ of male ciliated; thorax clothed with hair and scales mixed, the tegulæ produced to a dorsal ridge, the thorax with divided ridge-like crest; tibiæ fringed with long hair on outer side; abdomen with dorsal crests on basal segments. Fore wing with the apex somewhat produced and acute, the termen evenly curved and crenulate; veins 3 and 5 from near angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with the reniform expanding below and extending to well below cell.
  a. Fore wing with the reniform angled inwards on median nervure ..... *goniosema.*
  b. Fore wing with the reniform not angled inwards on median nervure.
    a^1. Fore wing with the antemedial line obsolete in submedian interspace ..... *intermedia.*

* The characters were taken from a specimen with the head of another species stuck on.

b^1. Fore wing with the antemedial line strongly angled outwards in submedian interspace.
a^2. Hind wing whitish, the terminal area suffused with brown ..... *ramosula.*
b^2. Hind wing uniform fuscous brown ..... *steuarti.*
B. Fore wing with the reniform small and not extending to below the cell.
a. Fore wing with the black fascia in submedian interspace from base to beyond middle.
a^1. Fore wing with the subterminal line dentate to termen throughout ..... *stolifera.*
b^1. Fore wing with the subterminal line dentate to termen at veins 7, 4, 3 ..... *campyla.*
b. Fore wing without black fascia in submedian fold from base to beyond middle.
a^1. Hind wing not tinged with rufous.
a^2. Fore wing without oblique white subapical marks.
a^3. Fore wing with the claviform whitish defined by black and with two brown streaks in centre..... *gnorima.*
b^3. Fore wing with the claviform defined on upper edge only.
a^4. Fore wing with oblique brown fasciæ from termen below apex and vein 3 ..... *detersina.*
b^4. Fore wing with triangular brown patch on termen below apex and quadrate patch below vein 3.
a^5. Fore wing with the postmedial line angled inwards to the antemedial line in submedian fold ..... *indica.*
b^5. Fore wing with the postmedial line not angled inwards in submedian fold..... *peterseni.*
b^2. Fore wing with oblique white subapical marks ..... *nea.*
b^1. Hind wing yellowish tinged with rufous ..... *albiclava.*

3796. **Delta goniosema**, n. sp. (Plate CXXVII., fig. 22.)

Auchmis ramosula, Druce, Biol. Centr.-Am., Het. ii. p. 474, nec Guen.

♀. Head and thorax grey tinged with rufous; palpi red-brown at sides; brown bars across frons and between antennæ; tegulæ with slight brown line near base and black line near tips; pectus, legs, and abdomen red-brown, the last with the dorsal crests blackish and short lateral black streaks at base. Fore wing grey suffused and irrorated with red-brown, the costal and inner areas, and area from end of cell obliquely to apex greyer, the veins with dark streaks; a black streak in basal half of submedian fold and a slight oblique streak above inner margin before middle; orbicular very elongate and oblique, defined by black streaks above and below; reniform white tinged with rufous, its upper part not defined, its lower part defined by black, obliquely truncate below and angled inwards on median nervure, the area round its lower part and below the pale oblique apical fascia deeper red-brown; short obliquely placed black subterminal streaks above veins 6, 5, 4; the extremities of veins 4, 3 defined by dentate whitish marks extending to termen, with short black streaks in the interspaces above veins 3, 2; cilia brown mixed with white. Hind wing

yellowish white suffused with brown especially on terminal area; the underside white with some slight dark points on termen.

Hab. Mexico, Jalapa (*Trujillo*), 2 ♀ type, Godman-Salvin Coll. *Exp.* 36 millim.

3797. Delta intermedia.

Cloantha intermedia, Brem. Lep. Ost-Sib. p. 53, pl. v. f. 13 (1864); Hmpsn. Moths Ind. ii. p. 283; Staud. Cat. Lep. pal p. 183.
Auchmis sikkimensis, Moore, P. Z. S. 1867, p. 49, pl. 6. f. 15.

Head ochreous tinged with rufous, brown bars on frons and between antennæ; tegulæ with three brown lines defined by white on basal half, the terminal half ochreous mixed with brown and with black and red-brown tips; thorax ochreous, the patagia with black streak near upper edge which is red-brown, the dorsum with paired black streaks, the metathoracic crest mixed with black; legs red-brown, the tibiæ and tarsi with black streaks; abdomen ochreous tinged with rufous, the crests blackish at tips. Fore wing ochreous suffused with red-brown, the cell and area beyond it

Fig. 37.—*Delta intermedia*, ♂. ½.

obliquely to apex and a fascia below it to origin of vein 2 ochreous white; a black streak in submedian fold from base to middle and another above inner margin from near base; a slight brown streak in middle of cell; reniform ochreous white defined by black, faintly above, with rufous centre with pale bar on it, extending to well below cell, narrowing above and below, with wedge-shaped rufous mark before it in lower part of cell, the area round its lower part deep red-brown with dark streaks on the veins, a black streak beyond it above vein 4 defined by a whitish streak above; a wedge-shaped black mark above extremity of vein 6 and black streak below it; dentate whitish marks extending to termen defining veins 5, 4, 3, which are slightly streaked with brown; small dentate black marks above extremities of veins 3, 2; a terminal series of slight brown striæ; cilia ochreous and red-brown. Hind wing yellowish white, in female tinged with brown, the terminal area suffused with brown; cilia yellowish white; the underside yellowish white, the costal area tinged with rufous, the terminal area slightly with brown at middle, a slight discoidal lunule and postmedial series of black points on the veins.

Hab. Transvaal (*Cholmley*), 1 ♀; Natal, Victoria Distr. (*Gooch*), 2 ♀; E. Siberia, Amurland, Ussuri; Japan, Hakodaté, 1 ♀, Kiushiu, 1 ♂, Satsuma (*Leech*), 1 ♀, Tsuruga (*Leech*), 1 ♀,

Yokohama (*Jonas*), 1 ♀ ; Corea, Gensan (*Leech*), 1 ♀ ; Centr. China, Ningpo, 1 ♀, Kiukiang (*Pratt*), 1 ♀; W. China, Chang Yang (*Pratt*), 1 ♀, Nitou, 1 ♂, Chia-kou-ho (*Pratt*), 1 ♂, Ta-chien-lu (*Pratt*), 2 ♂ ; Kashmir, Goorais Valley (*Leech*), 1 ♀ ; Punjab, Kulu, Sultanpur, 2 ♂, Simla (*Harford*), 2 ♀, Dharmsála (*Hocking*), 2 ♂, 4 ♀, Thundiani (*Yerbury*), 1 ♀; Sikhim, 3 ♂ type *sikkimensis* ; Madras, Nilgiris (*Hampson*), 1 ♂, 1 ♀ ; Ceylon (*Green*), 1 ♀. *Exp.* 32–34 millim.

3798. **Delta ramosula.** (Plate CXXVII. fig. 23.)

Cloantha ramosula, Guen. Noct. ii. p. 114, pl. 9. f. 1 (1852); Grote, Bull. Buff. Soc. Nat. Sci. i. p. 83, pl. 2. f. 16; Smith, Cat. Noct. N. Am. p. 167.

Head and thorax grey mixed with reddish brown ; frons with black bars at middle and above ; tegulæ with slight dark lines at middle and near tips ; pectus red-brown ; mid tibiæ with a black streak, the tarsi brown with pale rings ; abdomen ochreous suffused with rufous, the dorsal crests blackish at tips. Fore wing grey suffused with red-brown, the cell and area beyond it obliquely to apex ochreous white tinged with rufous, the veins with dark streaks ; a black streak in basal half of submedian fold slightly defined by whitish above ; a short black streak above inner margin before middle ; faint traces of an antemedial line very strongly angled outwards in submedian interspace and above inner margin and inwards on vein 1 ; orbicular represented by two slight rather oblique black streaks in cell ; reniform yellowish white defined by black on inner side and below and its centre by rufous, constricted at middle, expanding below and extending to below angle of cell, the area round its lower part deep red-brown, a short black streak from it above vein 4 ; the pale apical fascia defined by blackish below ; short subterminal black streaks above veins 6, 5, 4 ; veins 4, 3 defined by dentate whitish marks extending to termen and wedge-shaped black marks from termen above veins 2, 3 ; a terminal series of black striæ ; cilia dark brown intersected with white at the veins. Hind wing ochreous white, the terminal area broadly suffused with reddish brown, more uniformly suffused in female ; cilia ochreous white ; the underside yellowish white, the costal and terminal areas slightly irrorated with brown, a small discoidal spot and indistinct minutely waved curved postmedial line.

Hab. Canada (*Norman*), 1 ♀ ; U.S.A., Northern, Eastern, Middle and Central States, New York, Albany (*W. W. Hill*), 2 ♂, 3 ♀. *Exp.* 36–40 millim.

3799. **Delta steuarti.** (Plate CXXVII. fig. 24.)

Actinotia stewarti, Grote, Can. Ent. vii. p. 28 (1875); Smith, Cat. Noct. N. Am. p. 167.

♀. Head and thorax violaceous grey mixed with dark brown ; dark bars above frons and between antennæ ; tegulæ with slight

brown line near base and black line near tips; metathoracic crest blackish; tarsi blackish with pale rings; abdomen grey-brown with the dorsal crests blackish. Fore wing violaceous grey strongly suffused and irrorated with dark reddish brown, the base of cell and area just below it, the terminal part of inner area and the area from end of cell obliquely to apex rather greyer, the veins with slight dark streaks; a strong black streak in basal half of submedian fold; orbicular narrow, elongate, rather oblique with slight white annulus strongly defined by black; reniform white suffused with rufous above, defined by black on inner side and below, expanding and rounded below, a black streak from it to termen above vein 4; subterminal black streaks above veins 6 and 5, the latter longer, and short terminal black streaks in the interspaces above veins 3 and 2. Hind wing deep fuscous brown; the underside grey irrorated and suffused with reddish brown, an indistinct diffused curved postmedial line.

Hab. U.S.A., Washington Terr., 1 ♀, California, 2 ♀ type, Lake Co. (*Walsingham*), 4 ♀. *Exp.* 28–38 millim.

*3800. Delta stolifera.

Delta stolifera, Saalm. Lep. Madag. p. 264, f. 101 (1891).

♀. Head and thorax grey-brown with a slight rufous tinge; abdomen grey-brown. Fore wing grey-brown, the costa tinged with fuscous, the area just beyond the cell with rufous; the cell almost entirely occupied by a wedge-shaped black patch; a black fascia in submedian interspace from base to near termen expanding at middle and tapering at extremities; orbicular and reniform small with blackish centres and ochreous annuli, the former elongate and very narrow, the latter lunulate; a wedge-shaped blackish patch between veins 4 and 2 from lower angle of cell to the subterminal line defined above by a pale curved streak; subterminal line dentate to termen throughout, with slight blackish lunules before it on inner side between veins 6 and 4 and wedge-shaped black marks beyond it in the interspaces; a terminal series of black points. Hind wing fuscous brown, semihyaline whitish at base; cilia ochreous.

Hab. Madagascar, Nossi-Bé. *Exp.* 40 millim. This species is unknown to me.

3801. Delta campyla, n. sp. (Plate CXXVII. fig. 25.)

♀. Head and thorax ochreous mixed with rufous; tegulæ finely barred with red-brown and whitish, the tips deep rufous; patagia with black streak near upper edge which is deep rufous, pectus whitish at sides; mid and hind tibiæ with rufous streaks, the spurs banded with black; abdomen reddish ochreous suffused with brown, the ventral surface rufous. Fore wing ochreous tinged with rufous, the veins with dark streaks defined on each side by whitish; a black streak in submedian fold from base to postmedial line defined by red-brown below; another black streak above inner margin from near base to beyond middle; a black streak in lower part of

cell from before middle to extremity below the orbicular, which is whitish, very narrow and elongate, pointed at extremity; reniform very narrow and rather oblique with pale rufous centre and whitish annulus, a somewhat arched whitish streak from its lower extremity to postmedial line, which is very indistinct, with dark points on the veins towards costa, bent outwards below costa, with a V-shaped brown mark in discal fold, then represented by an oblique series of black points on the veins, and with wedge-shaped pale mark beyond it on each side of veins 4, 3 extending to termen; a triangular dark brown patch on terminal area from below vein 7 to above vein 4 and wedge-shaped patches above veins 3 and 2, these patches with black points on termen defined on inner side by pale points; cilia brown intersected by whitish. Hind wing white; the veins dark; the costal, inner and terminal areas suffused with brown; cilia ochreous white; the underside with the apical area suffused with ferruginous, the terminal half of costal area sparsely irrorated with black, a terminal series of black points from apex to vein 2.

Hab. Sierra Leone (*Cator*, *Bartlett*, *Austen*), 4 ♀ type. *Exp.* 40 millim.

*3802. Delta gnorima. (Plate CXXVII. fig. 26.)

Rhizogramma gnorima, Püng. Iris, 1906, p. 220, pl. viii. f. 6.

♂. Head and thorax whitish tinged with pale rufous; palpi with black streak at sides; frons with lateral black bars; tegulæ with some black scales at middle and slight blackish tips; patagia strongly edged with black; mid and hind femora and tibiæ with black streaks; abdomen pale ochreous tinged with rufous, the crest at base tipped with brown, sublateral black streaks on median segments. Fore wing whitish slightly tinged with brown, the cell, submedian interspace and area beyond the cell suffused with bright red-brown to postmedial line; the costa irrorated with brown; the veins with fine black streaks slightly defined by white; subbasal line represented by a very oblique black striga from costa; a sinuous black streak in base of submedian fold; a whitish fascia along base of median nervure with short black streaks on and above it, then bent upwards to upper edge of orbicular; antemedial line represented by a very oblique striga from costa, a very oblique line from median nervure to claviform and an inwardly oblique line slightly defined by white on inner side from claviform to vein 1; claviform narrow, whitish defined by black and with two slight brown streaks in centre; orbicular very narrow, oblique and elongate, whitish defined by black, its centre defined by a fine brown line; reniform a very narrow lunule with its extremities much produced, with brown centre and whitish annulus defined by black; postmedial line obsolete except on costal area where it is black defined by whitish on outer side and strongly bent outwards; a very obliquely curved dark brown fascia from termen just below apex to lower angle of cell; a strong dentate dark brown mark from termen below vein 4 and a very oblique streak below vein 3 from termen

to below angle of cell; a fine waved black terminal line; cilia brown with fine whitish line at base. Hind wing ochreous white tinged with red-brown, the veins and terminal area except towards tornus suffused with red-brown; cilia white; the underside white, the costal and terminal areas faintly tinged with brown, a postmedial series of dark points on the veins from costa to vein 2.

Hab. W. Turkestan, Aschabad, type † ♂ in Coll. Püngeler. *Exp.* 42 millim.

3803. **Delta detersina.** (Plate CXXVII. fig. 27.)

Rhizogramma detersina, Staud. Iris, ix. p. 369, pl. 4. f. 11 (1896); id. Cat. Lep. pal. p. 183.

♂. Head and thorax grey mixed with some brown; palpi with black mark at extremity of 2nd joint; frons with lateral black bars above and below; a black bar between antennæ; tegulæ with black medial line and dark brown tips; patagia with blackish streaks on edges; tibiæ and tarsi streaked with black; abdomen grey mixed with brown, the crests blackish at tips. Fore wing grey slightly irrorated with brown, the end of cell and area just beyond and below it suffused with red-brown, the veins streaked with black; a strong black streak in basal half of submedian fold defined by brown below, confluent with the small, narrow, black-defined claviform which has a black streak from its upper extremity; orbicular white defined by black, very oblique and elongate, narrowing towards extremity and confluent with the reniform, a small black mark in its upper extremity and a black streak in its lower part extending into the reniform, which is white, its lower part defined by black, its centre slightly by brown on inner side and its upper extremity produced; postmedial line whitish defined by black above towards costa, bent outward below costa, then oblique and almost obsolete; a black streak from termen below apex and an oblique series on a brown shade from above vein 6 to below 5; terminal black streaks on dentate brown marks above veins 3, 2 and black streaks on a brown shade above and below submedian fold in which there is a black streak extending to inner side of postmedial line; a terminal series of slight black lunules; cilia brownish ochreous intersected with white at the veins and with series of fuscous lunules. Hind wing whitish; the veins dark; the terminal area broadly suffused with brown to submedian fold; cilia ochreous white with a brown line through them; the underside white, the costal and terminal areas irrorated with brown, a slight discoidal lunule and postmedial series of minute black streaks on the veins.

Hab. W. Turkestan, Ferghana, Tarbagatai, Issyk Kul, 1 ♂; E. Turkestan, Kashgar, Ili. *Exp.* 42 millim.

3804. **Delta indica.** (Plate CXXVII. fig. 28.)

Xylophasia indica, Wlk. xxxii. 647 (1865): Hmpsn. Moths Ind. ii. p. 236.

Head and thorax greyish tinged with red-brown; palpi brown

except at tips; frons and vertex of head with black-brown bars; tegulæ with black lines at middle and near tips; patagia with black streak near upper edge; mid and hind tibiæ with black streaks, the fore tarsi blackish at extremity; abdomen grey tinged with brown, the crests brownish at tips. Fore wing grey tinged with brown, the veins streaked with black; a short black streak below base of costa with another beyond it in cell and a very oblique striga from median nervure to submedian fold in which there is a black streak from base to middle, forming a dentate mark at extremity enclosing a whitish mark representing the claviform; antemedial line represented by an oblique striga from costa and a line from extremity of claviform angled outwards in submedian fold and above inner margin and inwards on vein 1, a short dark streak beyond the claviform; orbicular defined by blackish, elongate, acute at extremity and touching the reniform, which is a narrow pale lunule defined by blackish; postmedial line almost obsolete and whitish from costa to vein 2, strongly bent outwards below costa and excurved to vein 4, below vein 2 represented by a slight brown line defined by whitish on outer side, angled inwards in submedian fold to the antemedial line and outwards on vein 1; an arched black streak from lower extremity of reniform to near termen and a short streak above middle of vein 3; the terminal area with triangular brown patch from below apex to vein 4 extending to postmedial line, and rather wedge-shaped patch between vein 3 and submedian fold; the interspaces of terminal area with black streaks extending on the brown patches to postmedial line, the streak above vein 3 rather downcurved; cilia brown intersected with whitish at the veins. Hind wing whitish tinged with brown, the veins, inner and terminal areas suffused with brown; cilia white; the underside with the costal and terminal areas slightly irrorated with brown, a slight discoidal lunule and postmedial series of short dark streaks on the veins.

Hab. Punjab, 2 ♂ type, Kulu, Sultanpur (*G. Young*), 4 ♀, Simla (*Swinhoe*), 1 ♂, 1 ♀, Kasauli, 1 ♂, Dalhousie, 1 ♂, Thundiani (*Yerbury*). 1 ♀, Kangra (*Dudgeon*), 1 ♂, Dharmsála (*Hocking*), 6 ♂, 2 ♀, Manpuri, 1 ♂. *Exp.* 46–50 millim.

3805. **Delta peterseni.**

Rhizogramma peterseni, Christ. Rom. Mém. iii. p. 76, pl. iv. f. 3 (1887); Hmpsn. Cat. Lep. Phal. B.M. v. p. 14; Staud. Cat. Lep. pal. p. 183.

Head and thorax grey mixed with brown; tegulæ brown at tips; abdomen grey irrorated with brown. Fore wing grey irrorated with reddish brown; subbasal line represented by brown striæ from costa and median nervure; a black streak with slight brown suffusion below it below the cell from base to the antemedial line, which is indistinct and angled outwards in submedian fold and above inner margin; claviform defined by a slight brown line above; orbicular and reniform small, defined by brown, the former oblique elliptical; postmedial line unusually near termen, very minutely

waved, double, slightly bent outwards below costa, oblique to vein 5, then inwardly oblique; subterminal line angled outwards at vein 7, retracted to postmedial line at vein 5, dentate to termen at veins 4, 3, then retracted to postmedial line at submedian fold, the area beyond it brown except at apex and inner margin; a lunulate terminal black line; cilia intersected with whitish. Hind wing white, the veins and terminal area tinged with brown; the underside with the costal and terminal areas slightly irrorated with brown, a postmedial series of points on the veins.

Hab. N. Persia, 1 ♂; W. Turkestan, Turcomania, 1 ♂, Issyk Kul, 1 ♀; W. Siberia, Altai, 1 ♂; E. Turkestan, Kuldja, 1 ♂. *Exp.* 38 millim.

3806. **Delta nea.**

Heterocampa nea, Druce, Biol. Centr.-Am., Het. ii. p. 458, pl. 90. f. 22 (1898).

♂. Head and thorax ochreous mixed with red-brown; palpi red-brown except at tips; tegulæ with rufous line near tips; pectus and legs with some rufous hair; abdomen ochreous suffused with rufous, the anal tuft large. Fore wing ochreous irrorated with brown and suffused with brown on costal and inner areas; a black streak below basal half of cell; subbasal line represented by a very oblique dark striga from costa; antemedial line obsolete from costa to submedian fold, then extremely strongly dentate outwards above and below vein 1 and inwards on vein 1; claviform and orbicular absent; reniform a rather small lunule defined by brown; slight dark streaks beyond the cell on veins 7 and 5; postmedial line indistinct, bent outwards below costa, then dentate and produced to black points on the veins, very oblique from vein 4 to below 2, some white points beyond it on costa; a brown subterminal line between veins 8 and 7, strongly bent inwards and defined by whitish above, an oblique triangular brown patch from termen below apex to below vein 5, defined by whitish above, and a wedge-shaped brown mark on extremity of vein 2. Hind wing ochreous white; the veins brown; the terminal area suffused with red-brown becoming fuscous towards inner edge; the underside with small dark discoidal spot and postmedial series of minute dark streaks on the veins.

Hab. Panama, Chiriqui; Fr. Guiana, St. Jean Maroni (*Schaus*), 1 ♂; Bolivia, Yungas-la-Paz. *Exp.* 44 millim.

*3807. **Delta albiclava.** (Plate CXXVII. fig. 29.)

Delta albiclava, Druce, A. M. N. H. (8) i. p. 302 (1908).

♂. Head and thorax ochreous tinged with rufous; palpi brown; frons with black bar above; pectus and legs greyish ochreous suffused with red-brown; abdomen greyish ochreous irrorated with brown. Fore wing ochreous suffused with rufous, the veins of

terminal area streaked with black; subbasal and antemedial lines absent; a black streak in submedian fold to the claviform, which is very narrow and elongate, white defined by black; orbicular defined by black, very narrow and oblique; reniform a faint slight oblique ochreous lunule defined by black on inner side, some dark suffusion between them extending to costa; postmedial line slight, black, dentate, oblique to vein 6, below vein 4 oblique to extremity of claviform, then erect; an oblique diffused ochreous shade from apex to reniform; subterminal line absent; the extremity of vein 4 with yellow streak below and vein 3 defined on each side by a dentate yellow mark; a fine black terminal line. Hind wing yellowish white tinged with rufous, the veins of terminal half streaked with brown; the underside with the costal and terminal areas slightly irrorated with black, a slight discoidal spot and indistinct curved minutely dentate postmedial line.

Hab. Peru, Huancabamba, type † ♂ in Coll. Druce. *Exp.* 36 millim.

Genus **ANDROPOLIA.**

Type.

Andropolia, Grote, Abh. Nat. Ver. Bremen, xiv. p. 82 (1895), non descr. ..... *theodori.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and moderately fringed with hair, the 3rd short, porrect; frons smooth with ridges of hair above and between antennæ; eyes large, round; thorax clothed with hair and scales mixed, the pro- and metathorax with spreading crests; tibiæ moderately fringed with hair; abdomen with rough hair at base and more or less developed dorsal series of crests. Fore wing with the apex rectangular, the termen evenly curved, crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male bipectinate with long branches to near apex.

A. Fore wing with the ante- and postmedial lines distinct... *diversilineata.*
B. Fore wing with the ante- and postmedial lines almost obsolete..... *illepida.*

3808. **Andropolia diversilineata.**

Hadena diversilineata, Grote, Bull. U.S. Geol. Geog. Surv. Terr. iii. p. 119 (1877); Smith, Cat. Noct. N. Am. p. 165.
Polia illepida, Grote, Can. Ent. xi. p. 95 (1879), ♀ (nec ♂).

Head, thorax, and abdomen grey mixed with fuscous; frons with blackish lateral bars; tegulæ with slight blackish medial line and tips; tarsi blackish ringed with white. Fore wing grey-white thickly irrorated with black; subbasal line represented by a striga from costa and a curved streak from cell to base at vein 1; antemedial line defined by whitish on inner side, oblique, slightly angled outwards below costa and more strongly above inner

margin ; claviform narrow, slightly defined by black ; orbicular and reniform rather small, defined by black, the former whitish, oblique elliptical, the latter with fuscous centre and whitish annulus ; a diffused medial line oblique from costa to below angle of cell, then inwardly oblique ; postmedial line black defined by white on outer side, bent outwards below costa, then minutely dentate, oblique

Fig. 38.—*Andropolia diversilineata*, ♂. ½.

below vein 4, crossed by a black streak in submedian interspace ; subterminal line formed by a series of somewhat dentate black marks almost obsolete towards costa, the area beyond it darker, strongly indented by the grey area on veins 7, 6, 4, 3 ; a terminal series of small black lunules ; cilia fuscous with a fine white line at base. Hind wing white, the veins and terminal area slightly tinged with fuscous, more strongly in female ; the underside with the costal area irrorated with fuscous, a slight discoidal spot and sinuous postmedial line.

Hab. U.S.A., Colorado, 2 ♀ type *illepida* ♀, Manitou, Durango (*Oslar*), 1 ♂, 3 ♀, Nevada, N. Mexico. *Exp.* 40–44 millim.

3809. **Andropolia illepida.** (Plate CXXVII. fig. 30.)

Polia illepida, Grote, Can. Ent. xi. p. 95 (1879), ♂ (nec ♀) ; Smith, Cat. Noct. N. Am. p. 165.
Polia resoluta, Smith, Trans. Am. Ent. Soc. xxi. p. 70, pl. 5. f. 5 (1894) ; Dyar, Cat. Lep. N. Am. p. 120.

♂. Head and thorax grey tinged with reddish brown ; frons with blackish lateral bars ; tegulæ with slight dark medial line ; patagia with dark line near upper edge ; tarsi brown with pale rings ; abdomen whitish suffused and irrorated with ochreous brown. Fore wing pale grey suffused and irrorated with pale red-brown ; the base of inner margin whitish ; subbasal line indistinctly double, angled outwards at middle and ending at vein 1 ; antemedial line almost obsolete with pale and black striga from costa and slight streaks on subcostal nervure and vein 1 ; the veins of terminal half with fine black streaks ; claviform small, elongate, defined by brown ; orbicular and reniform small defined by brown, the former round, the latter defined by rufous ; traces of an oblique medial line from costa to median nervure ; postmedial line almost obsolete, pale with black point at costa, bent outwards below costa and oblique below

vein 4, crossed by a black streak from subterminal line above submedian fold; subterminal line blackish, somewhat dentate, almost obsolete towards costa, angled inwards to postmedial line in discal and submedian folds, dentate nearly to termen at veins 4, 3, 1 and running inwards as a streak above inner margin to antemedial line; a terminal series of slight black lunules; a fine white line at base of cilia. Hind wing white, the veins and terminal area slightly tinged with brown; a postmedial series of minute dark streaks on the veins; a terminal series of dark striæ; the underside with the costal area slightly irrorated with brown.

Hab. U.S.A., Colorado, 1 ♂ type. *Exp.* 42 millim.

Sect. II. Antennæ of male serrate.

A. Fore wing with the ground-colour blue-grey.
  a. Fore wing with the terminal area concolorous ..... *pulverulenta*.
  b. Fore wing with the terminal area darker..... *contacta*.
B. Fore wing with the ground-colour grey-white.
  a. Fore wing with the claviform distinctly defined by black ..... *pallifera*.
  b. Fore wing with the claviform obsolete.
    a^1. Fore wing with the orbicular small, defined by black scales ..... *dispar*.
    b^1. Fore wing with the orbicular large, defined by ochreous..... *ochracea*.

3810. **Andropolia pulverulenta.** (Plate CXXVII. fig. 31.)

Polia pulverulenta, Smith, Trans. Am. Ent. Soc. xviii. p. 106 (1891); id. Cat. Noct. N. Am. p. 166.

♂. Head and thorax blue-grey mixed with black; frons with blackish bar; tegulæ with slight medial line; tarsi blackish ringed with white; abdomen grey largely mixed with fuscous. Fore wing blue-grey thickly irrorated with black; subbasal line slight, angled inwards in cell, from costa to submedian fold; antemedial line strong, waved, somewhat oblique; claviform narrow, defined by black; orbicular and reniform prominently defined by black, the former round, the latter large; a fairly distinct medial line, oblique from costa to lower angle of cell, then inwardly oblique and irregularly waved; postmedial line bent outwards below costa, then dentate, oblique below vein 4; subterminal line represented by a series of diffused dentate black marks except towards costa, angled outwards at veins 7, 6, 4, 3; a terminal series of small black lunules. Hind wing grey thickly irrorated with fuscous, a diffused discoidal spot, curved postmedial line, and somewhat lunulate terminal line more distinct on underside.

Hab. Canada, Alberta, Calgary (*Wolley-Dod*), 1 ♂; U.S.A., Colorado. *Exp.* 50 millim.

3811. Andropolia contacta.

Acronycta contacta, Wlk. ix. 58 (1856); Smith, Cat. Noct. N. Am. p. 166.
Acronycta aspera, Morr. Proc. Bost. Soc. N. H. xvii. p. 132 (1874).
Polia diffusilis, Harv. Can. Ent. x. p. 56 (1878).
Polia sansar, Streck. Lep. Rhop. Het., Suppl. i. p. 8 (1898); Dyar, Cat. Lep. N. Am. p. 120.

Head and thorax grey mixed with dark brown and fuscous; frons with blackish bar; tegulæ with slight blackish medial line; patagia with blackish streak near upper edge; abdomen grey suffused with brown. Fore wing blue-grey tinged with brown and irrorated with black, the terminal area darker, the veins with dark streaks; subbasal line dentate, from costa to submedian fold;

Fig. 39.—*Andropolia contacta*, ♂. ½.

antemedial line blackish slightly defined by white on inner side, oblique, angled outwards below costa and above inner margin and inwards on vein 1; claviform narrow, rather indistinctly defined by black; orbicular and reniform defined by black, the former rather oblique elliptical; an indistinct medial line oblique from costa to lower angle of cell, then inwardly oblique; postmedial line bent outwards below costa, oblique to vein 6, then inwardly oblique and dentate, the area beyond it rather greyer to the subterminal line which is represented by a series of dentate blackish marks, the grey area forming strong teeth on veins 7, 6, 4, 3; the terminal area suffused with fuscous; a terminal series of small black lunules. Hind wing grey suffused and irrorated with brown, the veins and a fine terminal line darker; cilia whitish with a brown line at base; the underside white irrorated with brown, a discoidal spot and sinuous postmedial line.

Hab. Canada, Hudson's Bay, St. Martin's Falls (*Barnston*), 1 ♂, 2 ♀ type; U.S.A., New York, Adirondack Mts., Lewis Co. (*W. W. Hill*), 1 ♂ type *diffusilis*, Washington. *Exp.* 50–54 millim.

3812. Andropolia pallifera. (Plate CXXVII. fig. 32.)

Polia pallifera, Grote, Can. Ent. ix. p. 88 (1877); Smith, Cat. Noct. N. Am. p. 166.

♀. Head and thorax grey mixed with brown; tegulæ with slight

dark medial line, patagia with some black scales near upper edge; tarsi banded with fuscous; abdomen brownish white. Fore wing grey-white largely suffused and irrorated with reddish brown; subbasal line defined by whitish on outer side, waved, from costa to vein 1, a slight black streak in submedian fold from it to the antemedial line, which is double, waved, somewhat oblique; claviform large, defined by black and filled in with brown; orbicular and reniform large, defined by black, the former round, the latter somewhat quadrate; an indistinct curved, dentate medial line; postmedial line indistinctly double, the inner line black, bent outwards below costa, then dentate, below vein 4 incurved to lower edge of reniform, some brown suffusion between it and medial line, some white points beyond it on costa; subterminal line very indistinct, whitish, defined on inner side by slight dentate brown marks and with some brown beyond it at middle, slightly angled outwards at vein 7 and excurved at middle; traces of some black lunules on termen; cilia brown intersected with grey. Hind wing grey suffused with ochreous brown, more fuscous on terminal area, a sinuous postmedial line and indistinct diffused grey subterminal band; a slight dark terminal line; cilia ochreous brown at base, whitish at tips; the underside with slight discoidal lunule, sinuous postmedial line with minute dark streaks on the veins, and traces of subterminal line.

Hab. U.S.A., Illinois, 1 ♀ type. *Exp.* 48 millim.

*3813. **Andropolia dispar.** (Plate CXXVIII. fig. 1.)

Polia dispar, Smith, Pr. U.S. Nat. Mus. xxii. p. 473 (1900); Dyar, Cat. Lep. N. Am. p. 120.

Head, thorax, and abdomen white slightly tinged with ochreous; tegulæ with slight dark line near tips; patagia with diffused dark lines near edges. Fore wing whitish slightly tinged with ochreous and with fuscous irroration obscuring the markings; subbasal line represented by slight dark marks on costa; antemedial line represented by a few dark scales and hardly traceable, strongly angled outwards in the interspaces, in submedian fold almost reaching postmedial line, the tooth in cell forming a small black mark before orbicular, which is small, round, slightly defined by black scales; reniform large with faint ochreous annulus defined by fuscous, the lower part tinged with fuscous; medial shade diffused fuscous, oblique from costa to median nervure, then inwardly oblique; postmedial line indistinct and incomplete, strongly dentate outwards on the veins and inwards in the interspaces, more distinct in submedian interspace; subterminal line only defined by dentate dark marks on its inner side; a terminal series of black lunules; cilia whitish with a dark line through them. Hind wing white, in female with the veins fuscous, the terminal area irrorated with fuscous towards tornus and a dark terminal line; the underside white with small discoidal spot.

Hab. U.S.A., Colorado, Glenwood Springs. *Exp.* ♂ 42, ♀ 45 millim. This species is unknown to me; figured from a drawing from type in U.S. Nat. Mus.

*3814. **Andropolia ochracea.** (Plate CXXVIII. fig. 25.)

Polia ochracea, Smith, Pr. U.S. Nat. Mus. xxii. p. 474 (1900); Dyar, Cat. Lep. N. Am. p. 120.

♂. Head and thorax greyish tinged with ochreous and irrorated with fuscous; abdomen ochreous white. Fore wing grey-white tinged with ochreous and irrorated with fuscous, the costal area and cell tinged with blackish before the antemedial line, the medial area more thickly irrorated; subbasal line represented by double black striæ from costa and cell filled in with whitish; antemedial line single, oblique, excurved below cell and angled outwards above inner margin; orbicular and reniform large, the former defined by ochreous at sides and open above and below, the latter defined by ochreous at sides; medial shade diffused, waved, interrupted; postmedial line single, bent outwards below costa, then dentate, incurved below vein 4 and connected with antemedial line by a dark streak in submedian fold, some white points beyond it on costa; subterminal line represented by a series of ochreous lunules defined on inner side by dentate dark marks; a fine interrupted black terminal line. Hind wing whitish slightly tinged with fuscous; a dark discoidal lunule, curved postmedial line and diffused subterminal band; a lunulate blackish terminal line; the underside tinged with yellowish, a dark discoidal lunule and curved postmedial line.

Hab. U.S.A., Iowa. *Exp.* 43 millim. This species is unknown to me; figured from a drawing from type in U.S. Nat. Mus.

Sect. III. Antennæ of male ciliated.

A. Fore wing without distinct black streak in base of submedian fold.
  a. Fore wing not suffused with ferruginous or purplish red.
    a^1. Fore wing with the ground-colour white ..... *olorina.*
    b^1. Fore wing with the ground-colour blue-grey.
      a^2. Fore wing with the terminal area concolorous ..... *aedon.*
      b^2. Fore wing with the terminal area darker ..... *extincta.*
  b. Fore wing suffused with ferruginous or purplish red ..... *theodori.*
B. Fore wing with prominent black streak in base of submedian fold.
  a. Fore wing with the ante- and postmedial lines distinct..... *maxima.*
  b. Fore wing with the ante- and postmedial lines almost obsolete ..... *acera.*

3815. **Andropolia olorina.** (Plate CXXVIII. fig. 29.)

Hadena olorina, Grote, Bull. Buff. Soc. Nat. Sci. iii. p. 84 (1876); Smith, Cat. Noct. N. Am. p. 165.

♂. Head and thorax white slightly mixed with black; frons

with black bar; tegulæ with slight black medial line; patagia with blackish line near upper edge; tarsi banded with blackish; abdomen white tinged with brown. Fore wing white irrorated with black; the veins faintly streaked with black; subbasal line dentate, from costa to vein 1; antemedial line oblique, dentate; hardly a trace of the claviform; orbicular and reniform defined by black, open on outer side, the former elongate elliptical, the latter large; a medial line oblique from costa to lower angle of cell, then inwardly oblique and somewhat dentate; postmedial line bent outwards below costa, then dentate, oblique below vein 4; subterminal line black, dentate outwards on veins 7, 6, 4, 3 and inwards to postmedial line in discal and submedian folds; a terminal series of small black lunules; cilia with series of black points. Hind wing white slightly irrorated with brown, the inner area tinged with brown; some brown points on termen; the underside with discoidal point and faint postmedial line with minute dark streaks on the veins.

Hab. U.S.A., Colorado, California, 1 ♂ type. *Exp.* 48 millim.

3816. **Andropolia aedon.** (Plate CXXVIII. fig. 5.)

Polia aedon, Grote, Can. Ent. xii. p. 154 (1880); Smith, Cat. Noct. N. Am. p. 165.

♂. Head and thorax clothed with white and black scales slightly mixed with rufous; frons with black bar; tegulæ with slight medial black line; patagia with black streak; abdomen whitish tinged with rufous especially on dorsum. Fore wing white irrorated with dark brown and tinged with rufous in places, the veins slightly streaked with black; subbasal line represented by oblique black striæ from costa and cell with some rufous suffusion beyond it above vein 1; antemedial line oblique from costa to submedian fold where it is angled outwards, angled inwards on vein 1, then strongly outwards above inner margin; orbicular and reniform prominently defined by black, the former rather elongate elliptical, the latter with some rufous in centre; a rufous medial line oblique from costa to beyond lower angle of cell, then inwardly oblique and minutely dentate; postmedial line black, bent outwards below costa, then dentate, oblique below vein 4, some white points beyond it on costa; subterminal line black, dentate outwards on veins 7, 6, 4, 3 and bidentate inwards almost to postmedial line in discal and submedian folds, some rufous suffusion beyond it; a prominent terminal series of small black lunules. Hind wing ochreous white tinged with brown especially on terminal area; cilia white; the underside white, the costal and terminal areas irrorated with brown, a discoidal lunule and postmedial line with minute black streaks on the veins showing through to upperside.

Hab. U.S.A., Washington, 1 ♂ type, Colorado, Nevada. *Exp.* 50 millim.

*3817. Andropolia extincta. (Plate CXXVIII. fig. 8.)

Polia extincta, Smith, Pr. U.S. Nat. Mus. xxii. p. 471 (1900); Dyar, Cat. Lep. N. Am. p. 120.

♀. Head and thorax blue-grey with dark irroration; patagia with dark lines near edges; abdomen grey slightly tinged with fuscous. Fore wing bluish grey with dark irroration, the terminal area darker; subbasal line represented by dark striæ from costa and cell; antemedial line rather strong, black defined by whitish scales on inner side, oblique, waved; claviform defined by black, acute at extremity; orbicular and reniform defined by black, the former elliptical, the latter large; medial shade oblique and blackish from costa to reniform, indistinct and incurved below the cell; postmedial line slightly defined by whitish on outer side, bent outwards below costa, then minutely dentate, excurved to vein 4, then oblique, some pale points beyond it on costa; subterminal line represented by a series of strongly dentate pale marks slightly defined by black on outer side and with black streak from it to postmedial line below vein 2; a terminal series of small black lunules. Hind wing greyish suffused and irrorated with fuscous; a large discoidal lunule and curved postmedial line; a terminal series of slight black lunules; cilia white; the underside grey with dark irroration, a discoidal spot and curved postmedial line.

Hab. U.S.A., New Hampshire, Twin Mountain. *Exp.* 47 millim. This species is unknown to me, figured from a drawing from type in U.S. Nat. Mus.; the male may prove to have serrate antennæ.

3818. Andropolia theodori.

Apatela theodori, Grote, Can. Ent. x. p. 237 (1878); id. Ill. Essay, p. 55, pl. ii. f. 17; Smith, Cat. Noct. N. Am. p. 165.
Polia epichysis, Grote, Can. Ent. xii. p. 219 (1880); id. Ill. Essay, p. 55, pl. ii. f. 18.

♂. Head and thorax grey-white tinged with pale and dark brown and yellow; frons with black bars at middle and above;

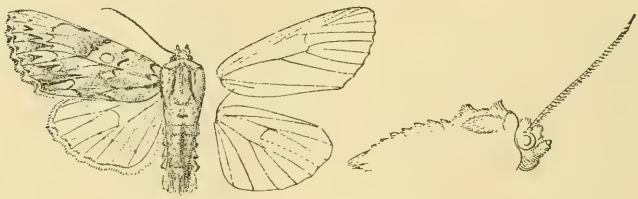


Fig. 40.—*Andropolia theodori*, ♂. ½.

tegulæ with black medial line and dark tips; pro- and metathoracic crests tipped with ferruginous; abdomen whitish dorsally tinged with rufous. Fore wing white largely suffused with ferruginous and slightly irrorated with black; the veins streaked with black;

subbasal line represented by oblique black striæ from costa and cell; antemedial line oblique, dentate; claviform, orbicular, and reniform slightly defined by red-brown, the second round, the latter large; a medial line oblique from costa to lower angle of cell, then inwardly oblique and somewhat dentate; postmedial line bent outwards below costa, then dentate, oblique below vein 4; subterminal line black, dentate outwards at veins 7, 6, 4, 3 and bidentate inwards to postmedial line in discal and submedian folds, some rufous suffusion beyond it; a terminal series of black points; cilia chequered brown and white. Hind wing white, the veins, inner area and termen faintly tinged with brown; the underside with slight discoidal lunule and postmedial line with minute dark streaks on it.

♀. Fore wing more suffused with rufous especially on outer half of medial area; hind wing with the inner and terminal areas tinged with pink.

Ab. 1. Much browner; abdomen deep rufous; hind wing uniformly suffused with rufous.—Vancouver.

Ab. 2. *epichysis*. Much greyer; fore wing largely suffused with purplish red; hind wing tinged with purplish red.—California.

Hab. Canada, Vancouver (*J. J. Walker*), 1 ♀; U.S.A., Colorado, 1 ♀ type, Glenwood Springs, 1 ♂, California, Sierra Nevada, 1 ♀, Shasta Co., Soda Springs, 1 ♀ type *epichysis*, New Mexico. *Exp.* 48–54 millim.

*3819. **Andropolia maxima.** (Plate CXXVIII. fig. 32.)

Polia maxima, Dyar, J. N.Y. Ent. Soc. xii. p. 40 (1904).

♂. Head and thorax ochreous tinged with rufous; patagia with blackish line near upper edge; abdomen ochreous. Fore wing ochreous tinged with rufous; subbasal line represented by an oblique whitish striga from costa; a black streak in basal part of submedian fold and another above inner margin; antemedial line defined by whitish on inner side, waved, angled outwards below costa and above inner margin; claviform large, defined by black, acute at extremity and with black streak from it to postmedial line; orbicular and reniform with ochreous centres and slight whitish annuli defined by black, the former very oblique elliptical, the latter large and slightly angled inwards on median nervure; a faint dark medial shade; postmedial line defined by whitish on outer side, bent outwards below costa, then minutely waved, excurved to vein 4, then oblique, the area beyond it with a violaceous tinge and some white points on costa; subterminal line pale, defined on inner side at middle by dentate dark marks and with diffused dark marks beyond it, slightly angled outwards at veins 7, 6 and dentate at veins 4, 3, 2; the veins of terminal area streaked with black; a terminal series of black striæ. Hind wing brownish ochreous, the veins fuscous; a slight postmedial line and diffused fuscous subterminal shade.

Hab. U.S.A., California, Eureka. *Exp.* 61 millim. This species is unknown to me; figured from a drawing from type in U.S. Nat. Mus.

*3820. Andropolia acera. (Plate CXXVIII. fig. 4.)

Polia acera, Smith, Pr. U.S. Nat. Mus. xxii. p. 472 (1900); Dyar, Cat. Lep. N. Am. p. 120.

Head, thorax, and abdomen pale purplish grey; frons with brown bar; tegulæ whitish at base and with black medial line; patagia with faint dark subterminal line. Fore wing pale purplish grey, the medial area tinged with rufous, the veins irrorated with black scales; a sinuous black streak below basal half of cell; a black streak above inner margin from near base to middle; antemedial line obsolete or hardly traceable, double, strongly angled outwards in submedian fold and above inner margin; claviform defined by black, acute at extremity and connected by a slight brown streak with the postmedial line; orbicular and reniform large, defined by brown and black scales, open above, the former oblique elliptical nearly or quite connected with the latter; traces of a brown medial shade in cell and from claviform to inner margin; postmedial line almost obsolete or indistinct, double beyond the cell, then dentate; subterminal line absent or represented by brown streaks in the interspaces of terminal area, more distinctly marked at middle and above tornus; cilia reddish grey. Hind wing greyish tinged with ochreous, paler at base; cilia whitish; the underside whitish tinged with fuscous and with slight dark irroration.

Hab. U.S.A., Washington, Pullman, Seattle. *Exp.* ♂ 42, ♀ 52 millim. This species is unknown to me; figured from a drawing from type in Coll. J. B. Smith.

Genus **LITHOMŒA.**

	Type.
Lithomoia, Hübn. Verz. p. 244 (1827)	*rectilinea.*
Hyppa, Dup. Cat. Méth. p. 161 (1844)	*rectilinea.*

Proboscis fully developed; palpi obliquely upturned, the 2nd joint reaching about to middle of frons and fringed with long hair in front, the 3rd short; frons smooth, with ridges of hair above and between antennæ; eyes large, round; antennæ of male with short branches dilated at extremity, the apex ciliated; thorax quadrately clothed with hair and hair-like scales, the pro- and metathorax with spreading crests; tibiæ moderately fringed with hair; abdomen with dorsal series of crests, the crests on 3rd and 4th segments very large. Fore wing with the apex rounded, the termen evenly curved and hardly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below middle of disco-cellulars; 6, 7 from upper angle or shortly stalked; 8 anastomosing with the cell near base only.

A. Fore wing with the whole medial area tinged with red-brown ..... *rectilinea.*
B. Fore wing with the medial area not tinged with red-brown towards costa.
  a. Fore wing with the antemedial line entire.
    a^1. Antennæ of male with short branches, metathoracic crest not rufous ..... *xylinoides.*

*b*¹. Antennæ of male with longer branches, metathoracic crest rufous ..... *brunneicrista.*

b. Fore wing with the antemedial line represented by a striga from costa and long teeth in submedian fold and above inner margin ..... *indistincta.*

3821. Lithomœa rectilinea.

Noctua rectilinea, Esp. Schmett. iv. p. 379, pl. 127. f. 1 (1788); Hübn. Eur. Schmett., Noct. f. 248; Dup. Lép. Fr. vii. p. 231, pl. 114. f. 6; Frr. Beitr. pl. 4. f. 1; Steph. Ill. Brit. Ent., Haust. ii. p. 179; Dyar, Cat. Lep. N. Am. p. 121; Staud. Cat. Lep. pal. p. 182.

Head and thorax white tinged with rufous; frons with black bar; tegulæ with strong black medial line; patagia chocolate-red with black line near upper edge which is pure white; metathorax chocolate-red; tarsi blackish ringed with white; abdomen red-brown, pale at base, the medial crests blackish. Fore wing white irrorated with red-brown, the medial area red-brown with some white irroration, especially beyond the cell and on inner area, the terminal area red-brown, the veins with slight dark streaks; subbasal line represented by slight brown striæ from costa and cell; the inner basal area suffused with red-brown with a diffused black fascia in base of submedian fold and a streak above inner margin before the antemedial line, which is black defined by white on inner side, oblique and slightly sinuous from costa to submedian fold, then angled inwards on vein 1 and outwards above inner margin, a strong black fascia in submedian fold from it to post-medial line; claviform very narrow, defined by black and obscured

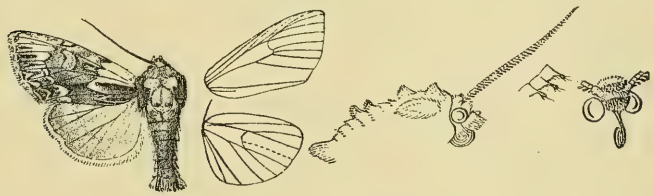


Fig. 41.—*Lithomœa rectilinea*, ♂. ½.

by the black fascia; orbicular and reniform large, defined by black, the former elongate elliptical with its outer edge indented, the latter irrorated with white; a slight dark medial shade from costa; postmedial line blackish defined by white on outer side and with white patch beyond it in submedian interspace, bent outwards below costa, slightly angled inwards in discal fold, oblique to vein 2, then incurved, some white points beyond it on costa; subterminal line represented by white striæ on dentate black marks from costa to vein 4 and angled outwards at vein 7, then by a white line angled outwards to termen on veins 4, 3, with a dentate black mark between them, then oblique and angled inwards in

submedian fold; a terminal series of blackish lunules; cilia red-brown with a fine pale line at base. Hind wing ochreous white suffused with red-brown especially on terminal half; cilia white with a dark line through them from apex to vein 2; the underside white, the costal area irrorated with brown, the terminal area suffused with red-brown, a dark discoidal lunule and diffused sinuous postmedial line.

Hab. Britain, Scotland, Leech Coll., England, Leech Coll.; France; Germany, Zeller, Frey, and Leech Colls.: Austria; Hungary; Switzerland; N. Italy; Russia, Livonia, Zeller Coll., St. Petersburg, Zeller Coll., Urals; W. Siberia, Altai; E. Siberia, Amur; Alaska. *Exp.* 40–46 millim.

Larva. Meyr. Brit. Lep. p. 129; Barrett, Lep. Brit. v. p. 35, pl. 189. f. 1.

Pale and dark brown mixed, laterally tinged with purple; dorsal line pale, interrupted, dark-edged; subdorsal series of pale oblique streaks, dark-edged behind; spiracular line pale towards extremities; 11th somite with two ochreous dots; head dark brown. Food-plants: *Salix* and *Rubus*. 7–3.

3822. Lithomœa xylinoides. (Plate CXXVIII. fig. 6.)

Hadena xylinoides, Guen. Noct. ii. p. 106, pl. 8. f. 11 (1852); Smith, Cat. Noct. N. Am. p. 155; Staud. Cat. Lep. pal. p. 182.
Xylina contraria, Wlk. xi. 627 (1857).
Hadena ancocisconensis, Morr. Can. Ent. vii. p. 198 (1875).

Head and thorax white mixed with brown; palpi blackish at sides; frons with black bar; tegulæ with strong black medial line; patagia red-brown edged with black and fringed with white hair above; tarsi fuscous ringed with white; abdomen grey-brown with the dorsal crests blackish. Fore wing bluish white irrorated with fuscous and more or less tinged with brown, the medial area suffused with rufous from the cell and vein 3 to submedian fold, the terminal area slightly tinged with brown towards apex and tornus, the veins with slight dark streaks; subbasal line represented by a black striga from costa, defined by white on outer side; a sinuous black streak in base of submedian fold and a streak above inner margin before the antemedial line, which is black defined by white on inner side, slightly angled outwards below costa and in cell, strongly in submedian fold and above inner margin and inwards on vein 1; a black streak in submedian fold from the ante- to the postmedial lines; orbicular and reniform large defined by black, the former elongate elliptical, rather acute at extremity; a slight medial fuscous shade from costa to median nervure; postmedial line double filled in with white, indistinct on costal half and with prominent white mark in submedian interspace, bent outwards below costa, oblique to vein 5, then inwardly oblique and slightly sinuous, some white points beyond it on costa; black streaks in the interspaces of terminal area between vein 7 and submedian fold interrupted by slight white lunules between veins 5 and 3 representing part of the white subterminal line, which is

angled outwards to termen on veins 4, 3, then incurved; a terminal series of slight black lunules; cilia brown intersected with white, with a fine dark line near base. Hind wing whitish tinged with reddish brown, the terminal area suffused with fuscous; cilia white with a brown line near base from apex to vein 2; the underside white, the costal and terminal areas irrorated with brown and the latter tinged with grey, a dark discoidal lunule, diffused curved postmedial line, and fine black terminal line.

Hab. Canada (*Norman*), 1 ♂, Ottawa (*Fletcher*), 2 ♂, 3 ♀, London (*Saunders*), 1 ♂, Orillia (*Bush*), 1 ♀, Alberta, Calgary (*Wolley-Dod*), 3 ♂, 6 ♂; U.S.A., Eastern and Central States to Virginia, New Hampshire, New York, Trenton Falls (*Doubleday*), 2 ♂, 3 ♂, type and type *contraria*, Sharon, 2 ♂, 3 ♀, Evans Center (*Grote*), 2 ♀. *Exp.* 38–46 millim.

Larva. Head shining brown. Dorsum yellow-brown, sides darker, cross-barred in darker brown; substigmatal band broad, pale, edged with brown, with a white line on joints 2–3, and on foot of 13; feet brown. Food-plants: Various.—H. G. D.

3823. Lithomœa brunneicrista. (Plate CXXVIII. fig. 28.)

Hyppa brunneicrista, Smith, Can. Ent. xxxiv. p. 31 (1902); Dyar, Cat. Lep. N. Am. p. 121.

Head and thorax grey; palpi dark at sides; vertex of head with the hair tipped with vinous red; tegulæ with prominent medial black line; patagia red-brown edged with black and grey above; metathoracic crest tipped with rufous; abdomen grey and fuscous brown mixed. Fore wing grey irrorated and suffused with dark brown, the inner area darkest, the medial area with some rufous suffusion above submedian fold; a black streak, edged with white above, below base of cell, some rufous scales below its extremity; subbasal line represented by a black point below costa; antemedial line black, partly defined by white on inner side, minutely dentate below costa, very strongly angled outwards in submedian fold and above inner margin and inwards on vein 1, a black streak in submedian fold from it to postmedial line; orbicular and reniform rather large, grey defined by black, the former elongate elliptical, the latter rather produced at extremities; postmedial line unusually near termen, obsolescent and greyish from costa to vein 5, then black defined by whitish on outer side, slightly bent outwards below costa, excurved to vein 4, then oblique and sinuous, the area beyond it greyer, becoming whitish below vein 3 and tinged with rufous in submedian fold; subterminal line represented by slight black streaks in the interspaces towards costa, then defined by the difference between the grey and fuscous terminal area, angled outwards to termen on veins 4, 3; a terminal series of small black lunules; cilia blackish with whitish line at base. Hind wing fuscous brown, becoming whitish towards base; cilia whitish with fuscous tips; the underside grey irrorated with fuscous, a discoidal spot showing through to upperside, and curved postmedial line.

Antennæ of male with the branches rather long.

Hab. Canada, Alberta, Calgary (*Wolley-Dod*), 1 ♂, Br. Columbia, Fraser R. (*St. John*), 1 ♀. *Exp.* 42–46 millim.

3824. Lithomœa indistincta. (Plate CXXVIII. fig. 30.)

Hyppa indistincta, Smith, Trans. Am. Ent. Soc. xxi. p. 63, pl. iv. f. 4 (1894); Dyar, Cat. Lep. N. Am. p. 121.

♀. Head and thorax bluish white mixed with dark brown; palpi with black patches at sides of 2nd joint; frons with black bar; tegulæ with strong black medial line; patagia with the outer half black-brown, the upper half white mixed with brown; tarsi blackish ringed with white; abdomen grey suffused with brown, the dorsal crests blackish. Fore wing bluish white with slight dark irroration, the veins with slight dark streaks, the inner area suffused with brown and blackish to the postmedial line; subbasal line represented by slight dark striæ from costa and cell; a strong diffused black streak just below submedian fold from base to the postmedial line, with some bluish white irroration below its extremity; a black streak with slight white streak below it above inner margin before the antemedial line, which is represented by a slight dark striga from costa, then obsolete to submedian fold, where it is very strongly angled outwards, then very strongly angled inwards on vein 1 and outwards above inner margin to the postmedial line; orbicular and reniform faintly defined by fuscous, the former elongate elliptical, the latter with slight dark centre; a slight dark medial shade from costa; postmedial line indistinct from costa to vein 5, then black defined by white on outer side, slightly bent outwards below costa, excurved to vein 4, then oblique and slightly sinuous, some white points beyond it on costa; the terminal area with black streaks in the interspaces above veins 4, 3, the lower streak extending to the postmedial line, the upper to just before it; a triangular dark shade from termen below apex; subterminal line obsolete except from below vein 3 to tornus where it is white, incurved and with a dark shade beyond it; a terminal series of small black lunules; cilia whitish and fuscous with a dark line through them. Hind wing greyish suffused with fuscous brown, the terminal area rather darker; cilia grey-white with a fuscous line through them; the underside greyish suffused with brown and the costal area with bluish white, the terminal area rather darker, a dark discoidal spot and diffused curved postmedial line.

Hab. Canada, Br. Columbia, Upper Ashnold (*Mrs. Nicholl*), 1 ♀; U.S.A., Oregon, Mt. Hood. *Exp.* 42 millim.

Larva. Head shining brown. Body dark brown, cross-barred in darker brown, cutting obliquely a faint subdorsal line; substigmatal band broad, pale, edged with brown, with a white line on joints 2–3 and on foot of 13; feet brown. Food-plants: Various.—H. G. D.

Genus PULCHERIA.

Type.
Pulcheria, Alph. Stett. ent. Zeit. 1887, p. 170 ..... *catomelas*.

Proboscis fully developed; palpi obliquely upturned, the 2nd joint reaching to about vertex of head and moderately scaled in front, the 3rd short, porrect; frons smooth; eyes large, round; antennæ of male bipectinate with moderate branches, the apex simple; thorax clothed with hair and hair-like scales, the prothorax with sharp triangular crest; the metathorax without crest; tibiæ fringed with long hair; abdomen with dorsal crests on basal segments and lateral tufts of hair on terminal segments. Fore wing with the apex rectangular, the termen crenulate, oblique towards tornus; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

3825. Pulcheria catomelas.

Pulcheria catomelas, Alph. Stett. ent. Zeit. 1887, p. 170; id. Rom. Mém. v. p. 173, pl. 7. ff. 10, *a*, *b*; Staud. Cat. Lep. pal. p. 212.

♂. Head, thorax, and abdomen whitish mixed with some brown, the last dorsally tinged with fuscous leaving faint pale segmental lines. Fore wing whitish tinged with brown and irrorated with fuscous, the veins with slight dark streaks; subbasal line indistinctly double, angled outwards in and below cell and ending at submedian fold; antemedial line indistinctly double and somewhat dentate, oblique from costa to middle of cell, then

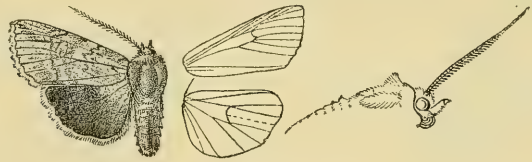


Fig. 42.—*Pulcheria catomelas*, ♂. ½.

inwardly oblique; orbicular with faint whitish annulus, its centre tinged with fuscous, oblique elliptical; reniform slightly defined by fuscous and with fuscous line in centre, an indistinct medial shade, oblique from costa to median nervure; postmedial line indistinct, double, minutely waved, excurved from costa to vein 6, then oblique; subterminal line represented by a slight dark mark on costa, an oblique shade from vein 7 to 5 and slight marks in the interspaces from below vein 4 to inner margin; a fine waved terminal blackish line. Hind wing black-brown, the base grey; cilia white slightly tinged with brown at base. Underside of fore wing suffused with black-brown leaving the costal and terminal areas grey; hind wing black-brown, the base grey with irregularly diffused outer edges, the costa and inner margin grey.

Hab. E. Turkestan, Kashgar, 2 ♂. *Exp.* 38–42 millim.

Genus **FOTA.**

Type.
Fota, Grote, Can. Ent. xiv. p. 174 (1882)..... *armata.*

Proboscis fully developed; palpi porrect, extending about the length of head and fringed with long scales below, the 3rd joint moderate; frons with large rounded corneous prominence with raised edges and long pointed central process hidden in long hair, a large corneous plate below it; eyes large, round; antennæ of male ciliated; thorax clothed almost entirely with scales, the pro- and metathorax with slight spreading crests; tibiæ smoothly scaled, the fore tibia with small curved claw on inner side; abdomen without crests. Fore wing long and narrow, the margins subparallel, the apex rounded, the termen obliquely curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 typically from cell; 5 obsolescent from middle of discocellulars; 6, 7 stalked; 8 anastomosing with the cell to middle.

Sect. I. Hind wing of female with veins 3, 4 stalked.

3826. Fota minorata.

Fota minorata, Grote, Can. Ent. xiv. p. 181 (1882); Smith, Cat. Noct. N. Am. p. 183.
Iscadia aperta, Druce, Biol. Centr.-Am., Het. ii. p. 474 (part.), nec Wlk.

Head and tegulæ ochreous white, palpi, sides of frons and antennæ mixed with brown; thorax dark grey mixed with fuscous and whitish; pectus, legs, and abdomen ochreous white. Fore wing purplish grey suffused and irrorated with fuscous especially on costal area; an indistinct curved subbasal line with paler grey before it and beyond it at costa, an elongate pale grey mark defined

Fig. 43.—*Fota minorata*, ♀. ½.

by blackish beyond it in cell; antemedial line indistinctly double, slightly angled outwards below costa, excurved to submedian fold, then incurved; orbicular and reniform pale grey defined by black, their centres tinged with brown, the former round, the latter elliptical and with curved dark line in centre; postmedial line very indistinct, strongly bent outwards below costa, then minutely waved and below vein 4 strongly bent inwards; the interspaces of terminal area with slight black streaks. Hind wing yellowish white.

Hab. U.S.A., Arizona (*Hulst*), 1 ♀; Mexico, Sonora (*Morrison*), 1 ♂, Godman-Salvin Coll. *Exp.* 28–30 millim.

Sect. II. Hind wing of female with veins 3, 4 from cell.

3827. Fota armata.

Fota armata, Grote, Cat. Ent. xiv. pp. 175, 181 (1882); Smith, Cat. Noct. N. Am. p. 183.

♀. Head whitish mixed with brown; neck with some ochreous hair; thorax purplish grey mixed with fuscous and brown; pectus and legs white; abdomen ochreous white. Fore wing purplish grey suffused and irrorated with fuscous; subbasal line represented by two faint oblique striæ from costa; antemedial line indistinct, double, minutely waved to submedian fold, then bent inwards, a diffused black streak in submedian fold from it to postmedial line; orbicular and reniform whitish defined by black and

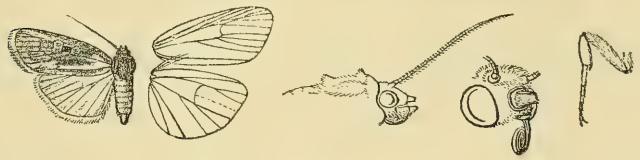


Fig. 44.—*Fota armata*, ♀. ½.

their centres slightly by fuscous, the former round, the latter elliptical, a diffused black fascia before and between them; postmedial line indistinct, strongly bent outwards below costa, minutely dentate to vein 2, then bent inwards, an indistinct whitish subterminal line, somewhat excurved below vein 7 and at middle, and crossed by slight black streaks below veins 8, 7, 6; a terminal series of slight blackish points. Hind wing white, the veins and terminal area suffused with ochreous; the underside white, the costal area slightly irrorated with brown towards apex.

Hab. U.S.A., Arizona, Nogales, 1 ♀. *Exp.* 32 millim.

Genus **OXYCNEMIS.**

Type.

Oxycnemis, Grote, Can. Ent. xiv. p. 182 (1882) ..... *advena*.

Proboscis aborted, small; palpi obliquely upturned, slender, hardly reaching the middle of frons and moderately fringed with hair in front; frons smooth; eyes large, round; antennæ of male serrate and fasciculate; thorax clothed with rough hair and scales mixed, the prothorax without crest, the metathorax with large crest formed of large curled scales; tibiæ moderately fringed with hair, the fore tibia very short, broadening into a large curved claw on inner side at extremity; abdomen without crests. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base only.

A. Metathoracic crest with metallic scales.
  a. Fore wing with the orbicular and reniform conjoined by a white streak in upper part of cell ..... *fusimacula.*
  b. Fore wing with the orbicular and reniform not conjoined.
    a^1. Fore wing with the antemedial line nearly straight.
      a^2. Fore wing with the orbicular and reniform indistinctly defined ..... *gustis.*
      b^2. Fore wing with the orbicular and reniform strongly defined by black..... *baboquavaria.*
    b^1. Fore wing with the antemedial line sinuous ..... *advena.*
B. Metathoracic crest without metallic scales.
  a. Fore wing with the orbicular and reniform not confluent.
    a^1. Fore wing with the orbicular round..... *subsimplex.*
    b^1. Fore wing with the orbicular narrow and elongate . *acuna.*
  b. Fore wing with the orbicular and reniform confluent.
    a^1. Fore wing with the stigmata defined by black ..... *gracillinea.*
    b^1. Fore wing with the stigmata not defined by black... *adusta.*

3828. **Oxycnemis fusimacula.** (Plate CXXVIII. fig. 2.)

Oxycnemis fusimacula, Smith, J. N.Y. Ent. Soc. x. p. 50 (1902); Dyar, Cat. Lep. N. Am. p. 184.

♀. Head and thorax black and white mixed; metathoracic crest small, black with a few metallic scales; tarsi blackish slightly ringed with white; abdomen white faintly tinged with brown. Fore wing white irrorated with black, somewhat more thickly on medial and terminal areas; subbasal line black, from costa to submedian fold; antemedial line black, oblique and sinuous to submedian fold, where it is acutely angled outwards, then incurved and bent outwards above inner margin; claviform white slightly irrorated with fuscous and defined by black, acute at extremity and extending almost to postmedial line; orbicular and reniform with white annuli defined by black, the former elongate and rather pointed at extremities, the latter angled inwards below subcostal nervure to the former, its upper extremity produced and acute, with two oblique white streaks from it to costa defining the black veins and crossing the black postmedial line which is bent outwards below costa, then oblique, slightly excurved at median nervules and angled outwards on vein 1; an oblique dark shade from costa near apex to outer side of reniform; subterminal line very indistinct, whitish and diffused, somewhat excurved at middle; the terminal area with fine black streaks on the veins; cilia chequered blackish and white. Hind wing white, the terminal area tinged with brown from apex to submedian fold; a fine dark terminal line except towards tornus; cilia white slightly mixed with brown; the underside with the costal area and termen to vein 3 irrorated with brown.

Hab. U.S.A., Arizona, Yuma Co., 2 ♀ cotype. *Exp.* 26 millim.

*3829. Oxycnemis gustis.

Oxycnemis gustis, Smith, Trans. Am. Ent. Soc. xxxiii. p. 138 (1907).

♂. Head and thorax blackish with some white scales and hair mixed, the metathoracic crest with a metallic gloss; abdomen white tinged with brown. Fore wing bright blue-grey, the cell filled in with white and the basal area irrorated with white; subbasal line blackish, from costa to submedian fold; antemedial line rather diffused, blackish, somewhat oblique and slightly angled outwards at middle; claviform indistinctly defined by black, large and broad; orbicular indistinctly defined by grey, round; reniform grey, indistinctly defined, its outer part obscured by an oblique dark shade from costa just before apex; postmedial line rather slight, blackish, bent outwards below costa and incurved below vein 4, some white suffusion beyond it on inner area; subterminal line indicated by slight white shading with some dark irroration beyond it; a fine black terminal line; cilia intersected with fuscous. Hind wing white, the costal area and termen irrorated with fuscous; the underside with the costal area irrorated with fuscous, a slight postmedial line.

Hab. U.S.A., S. Arizona. *Exp.* 21 millim. This species is unknown to me.

3830. Oxycnemis baboquavaria. (Plate CXXVIII. fig. 3.)

Oxycnemis baboquavaria, Smith, Trans. Am. Ent. Soc. xxxiii. p. 137 (1907).

♂. Head and thorax white mixed with black-brown, the metathoracic crest formed of metallic black scales; abdomen ochreous white with faint diffused brownish band. Fore wing purplish grey thickly irrorated with black-brown and with some brown suffusion on medial area in and below cell; subbasal line black, slightly angled outwards in cell, from costa to submedian fold; antemedial line black, erect, very slightly incurved below submedian fold; claviform large, defined by black, pointed at inner extremity; orbicular and reniform white irrorated with black-brown and defined by black, the former rather elongate elliptical, the latter produced at upper extremity, some white suffusion between them in cell; postmedial line black, very strongly angled outwards below costa to towards apex and almost obsolete, then oblique, angled outwards at veins 4, 3 and excurved from submedian fold to inner margin, some white points beyond it on costa; an oblique blackish fascia from apex to outer edge of postmedial line at vein 6; the veins of terminal area slightly streaked with black; a fine black terminal line. Hind wing white irrorated with brown, the veins streaked with brown on terminal area; a fine terminal brown line; the underside white, the costal area irrorated with brown, the veins streaked with brownish on terminal area, a brownish postmedial line excurved below costa, then oblique.

Hab. U.S.A., Arizona, Baboquavaria Mts. (*Poling*), 2 ♂ cotype. *Exp.* 24 millim.

3831. Oxycnemis advena.

Oxycnemis advena, Grote, Can. Ent. xiv. p. 182 (1882); Smith, Cat. Noct. N. Am. p. 267.

Head and thorax fuscous brown irrorated with grey-white, the metathoracic crest black with metallic silvery scales; tarsi blackish ringed with white; abdomen greyish suffused with brown. Fore wing purplish grey irrorated and in parts suffused with black-brown; subbasal line strong, black, curved, from costa to vein 1; antemedial line strong, black, oblique, sinuous; claviform defined by black and with slight pale annulus, elongate and pointed at extremities; orbicular and reniform whitish irrorated with brown and defined by black, the former round; postmedial line strong, black, slightly defined by whitish on outer side, strongly bent

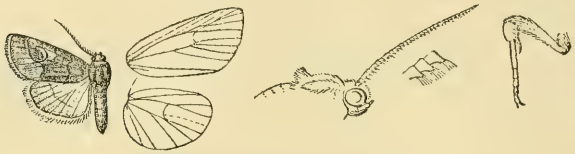


Fig. 45.—*Oxycnemis advena*, ♂. ½.

outwards and almost obsolete below costa, then oblique, slightly angled outwards at veins 4, 3, then incurved and bent outwards below submedian fold; an oblique black shade from costa near apex to just beyond postmedial line at vein 6; faint traces of a minutely waved subterminal line; a fine black terminal line. Hind wing whitish suffused with brown especially on terminal area; a fine dark terminal line; cilia white slightly mixed with brown; the underside white irrorated with brown, especially on costal and terminal areas, a brownish discoidal spot and rather diffused curved postmedial line from costa to submedian fold.

Hab. U.S.A., Arizona, Huachuca Mts. (*Oslar*), 2 ♂, 1 ♀. *Exp.* ♂ 26, ♀ 32 millim.

3832. Oxycnemis subsimplex. (Plate CXXVIII. fig. 7.)

Oxycnemis subsimplex, Dyar, J. N.Y. Ent. Soc. xii. p. 42 (1904).

♂. Head and thorax fuscous mixed with grey; tegulæ ochreous except at tips; pectus whitish; abdomen ochreous, ventrally white irrorated with brown. Fore wing fuscous mixed with grey-white, the veins with slight dark streaks; subbasal line black defined by grey on outer side, curved, from costa to base at submedian fold; antemedial line black defined by grey on inner side, erect, slightly waved; claviform defined by black, large and extending to cell; orbicular and reniform with whitish annuli defined by black, the former round, the latter with whitish lunule

in centre; postmedial line black defined on each side by grey, touching upper extremity of reniform, then bent outwards, incurved and minutely dentate below vein 4, some whitish points beyond it on costa and an oblique grey shade from before apex to the angle of postmedial line; subterminal line whitish, defined on inner side by minute dark streaks, minutely dentate; a terminal series of minute black lunules; cilia fuscous with fine white lines at base and middle. Hind wing white, the veins brownish; a discoidal point and curved postmedial series of points on the veins; a fine brown terminal line from apex to submedian fold; the underside with the costa irrorated with brown.

Hab. U.S.A., Arizona, 1 ♂. *Exp.* 28 millim.

*3833. **Oxycnemis acuna.** (Plate CXXVIII. fig. 9.)

Oxycnemis acuna, Barnes, Can. Ent. xxxix. p. 67 (1907).

Head and thorax grey mixed with brown; abdomen whitish tinged with brown. Fore wing grey irrorated with brown; subbasal and antemedial lines absent; claviform and orbicular brownish white defined by black, very narrow and elongate, the latter extending to beyond the former; reniform grey defined by a few black scales, especially at sides, and with brownish centre, an oblique white shade from its upper extremity to near apex; postmedial line absent; subterminal line pale, irregular, interrupted, defined on inner side by blackish markings, more distinct towards apex and tornus; a fine black terminal line; cilia mixed with fuscous and with slight pale lines at base and middle. Hind wing white tinged with brown; a faint discoidal point; a fine brown terminal line; cilia white; the underside with the costal area tinged with yellowish, a yellow-brown terminal line.

Hab. U.S.A., Texas, San Antonio. *Exp.* 18 millim. This species is unknown to me; figured from a drawing from type in Coll. W. Barnes.

3834. **Oxycnemis gracillinea.** (Plate CXXVIII. fig. 10.)

Oncocnemis gracillinea, Grote, Can. Ent. xiii. p. 231 (1881); Smith, Cat. Noct. N. Am. p. 162.
Oxycnemis yuma, Smith, Trans. Am. Ent. Soc. xxxiii. p. 138 (1907).

Head and thorax white mixed with some black-brown; abdomen white tinged with brown except at base. Fore wing white tinged with brown and irrorated with black-brown; claviform extremely narrow and elongate from close to base to postmedial line, with brown streak in middle and white annulus defined by black; antemedial line hardly traceable, somewhat oblique below the claviform; orbicular and reniform with brown centres and white annuli defined by black, the former a very narrow and elongate streak confluent with the latter, which is small; postmedial line obsolete except from reniform to inner margin, where it is very indistinct, below vein 1 bent inwards as a slight

streak above inner margin to before middle; a slight oblique white shade from costa near apex to the reniform, the veins on it with fine black streaks; subterminal line slight, white, dentate, somewhat angled outwards at veins 7 and 4, crossed by an oblique dark shade from apex to discal fold and defined on inner side by diffused brown below vein 4; a black terminal line slightly defined by white on inner side; cilia with fine white line near tips. Hind wing white tinged with brown; a dark terminal line; cilia white with a slight brownish line through them; the underside white irrorated with brown, a brownish discoidal lunule and curved maculate postmedial line with minute dark streaks on the veins.

Hab. U.S.A., California, Walters Station, 1 ♂ cotype *yuma*, Arizona (*Poling*), 1 ♂, Yuma Co., 1 ♀, Prescott (*Kunzé*), 1 ♀. *Exp.* 22 millim.

*3835. Oxycnemis adusta.

Oxycnemis adustus, Smith, Trans. Am. Ent. Soc. xxxiii. p. 139 (1907).

♂. Head and thorax ochreous suffused with dull grey, frons chocolate-brown, vertex of head and thorax irrorated with black, the metathoracic crest darker; abdomen whitish tinged with brown. Fore wing ochreous suffused with dull ash-grey; subbasal and antemedial lines absent; claviform very elongate, extending from base to near postmedial line but very indistinct and represented by scattered white scales only; orbicular and reniform indistinctly defined by white, the former elongate and confluent with middle of latter; postmedial line fuscous defined by whitish on outer side, acutely angled outwards beyond the cell, then oblique; subterminal line very irregular and interrupted, whitish defined on inner side by dark shades and streaks in the interspaces, more prominent at discal and submedian folds, a diffused white streak from its inner side at costa to the reniform; a black terminal line; cilia greyish with a yellowish line through them. Hind wing whitish tinged with fuscous especially towards termen; cilia white; the underside whitish.

Hab. U.S.A., Texas, San Antonio. *Exp.* 17 millim. This species is unknown to me.

Genus **FALA**.

Type.

Fala, Grote, Proc. Acad. Nat. Sci. Phil. 1875, p. 425 .... *ptycophora*.

Proboscis fully developed; palpi obliquely upturned, the 2nd joint hardly reaching the middle of frons and fringed with long hair in front, the 3rd short; frons with large round corneous prominence with raised edges and flattened vertical process in centre rounded in front, and curved corneous plate below it; eyes large, round; antennæ of male somewhat laminate and minutely ciliated; thorax clothed with rough hair, the pro- and metathorax with spreading crests; tibiæ moderately fringed with hair, the fore tibia with long curved claw on inner side at extremity; abdomen with some rough hair at base but

without crests. Fore wing with the costa slightly excised beyond middle, the apex rectangular, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 stalked; 8 anastomosing with the cell near base only.

3836. Fala ptychophora.

Fala ptychophora, Grote, Proc. Acad. Nat. Sci. Phil. 1875, p. 426; id. Ill. Essay, p. 64, pl. 3. f. 36; Smith, Cat. Noct. N. Am. p. 264.

♂. Head and thorax white mixed with black-brown, the head and tegulæ tinged with ochreous, the tegulæ and thoracic crests tipped with blackish; abdomen pale ochreous, the ventral surface whitish irrorated with brown. Fore wing whitish suffused with ochreous, especially in discal and submedian folds and on terminal area, and with some dark brown irroration especially from cell to postmedial line, between veins 5 and 2; subbasal line represented

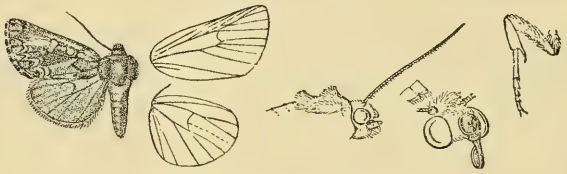


Fig. 46.—*Fala ptychophora*, ♂. ½.

by a slight dark striga from costa; antemedial line blackish, oblique from costa to median nervure, then dentate; orbicular and reniform white defined by blackish, the former round, the latter narrow, oblique, slightly angled inwards on median nervure; postmedial line indistinct, double, dentate, excurved from costa to vein 4, then oblique, some white points beyond it on costa and the area between it and subterminal line filled in by white lunules from vein 5 to inner margin; subterminal line black defined on outer side by an oblique white bar from costa, then dentate; a terminal series of black striæ interrupted by white points at extremity of veins and base of cilia which are blackish. Hind wing ochreous irrorated with brown; traces of a discoidal lunule and curved postmedial line; cilia fuscous with a whitish line at base; the underside ochreous sparsely irrorated with brown, a large diffused dark discoidal lunule.

Hab. U.S.A., California, 1 ♂ type. *Exp.* 34 millim.

Genus **LEUCOCNEMIS**, nov.

Type, *L. perfundis*.

Proboscis fully developed; palpi upturned, the 2nd joint hardly reaching to middle of frons and moderately scaled, the 3rd minute; frons smooth; antennæ of male minutely ciliated; thorax clothed almost entirely with scales and without crests; fore tibiæ with curved claw at extremity on inner

side; mid and hind tibiæ slightly fringed with hair above; build slender; abdomen without crests. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with the orbicular and reniform present.
  a. Fore wing with the ante- and postmedial lines distinct ... *sectilis.*
  b. Fore wing with the ante- and postmedial lines almost obsolete ..... *perfundis.*
B. Fore wing with the orbicular and reniform absent ..... *nivalis.*

*3837. ? Leucocnemis sectilis. (Plate CXXVIII. fig. 11.)

Oxycnemis sectilis, Smith, Trans, Am. Ent. Soc. xxi. p. 86, pl. vi. f. 3 (1894); Dyar, Cat. Lep. N. Am. p. 184.

Head chocolate-brown; thorax grey-white, the tegulæ with some brown scales; abdomen white. Fore wing grey-white, the markings defined by chocolate-brown scales; antemedial line single, excurved; claviform large, white defined by brown; orbicular and reniform whitish defined by brown, the former elliptical, the latter broad; a faint dark medial shade; postmedial line single, angled outwards beyond the reniform, then incurved to its lower extremity; subterminal line only defined by a dark shade on its inner side, more distinct towards costa, slightly angled outwards at vein 7; a terminal series of dark striæ. Hind wing pure white.

The fore tibia is said to have "a short inner as well as a longer outer claw."

Hab. U.S.A., Texas. *Exp.* 22 millim. This species is unknown to me; figured from a drawing from type in U.S. Nat. Mus.

3838. Leucocnemis perfundis.

Oxycnemis perfundis, Smith, Trans. Am. Ent. Soc. xxi. p. 87, pl. vi. f. 6 (1894); Dyar, Cat. Lep. N. Am. p. 184.

Head, thorax, and abdomen ochreous white. Fore wing ochreous white slightly irrorated with brown, rather more thickly on

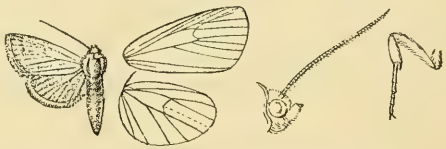


Fig. 47.—*Leucocnemis perfundis*, ♂. ½.

terminal area; no trace of subbasal or antemedial lines; orbicular and reniform very small and indistinct, white with brownish centres, undefined, the former round; traces of a postmedial line

with somewhat darker points on the veins, slightly bent outwards below costa, then minutely dentate, very oblique below vein 4; no trace of subterminal line; cilia brown and white. Hind wing ochreous white slightly tinged with brown especially on terminal area; cilia white with a faint brown line through them; the underside white.

Hab. U.S.A., Texas, Colorado, Denver, 3 ♂, 1 ♀. *Exp.* 26 millim.

*3839. ? Leucocnemis nivalis. (Plate CXXVIII. fig. 12.)

Oxycnemis nivalis, Smith, Trans. Am. Ent. Soc. xxi. p. 87, pl. vi. f. 5 (1894); Dyar, Cat. Lep. N. Am. p. 184.

♀. Head, thorax, and abdomen white, the head tinged with ochreous in front; the vertex of thorax slightly tinged with grey. Fore wing white, the disk faintly tinged with grey and without markings, except a very faint trace of a medial shade. Hind wing pure white. Underside of fore wing fuscous with the margins white.

The fore tibia is said to be "short and broad, not as much abbreviated as in *L. perfundis*, and there is a small inner claw which is not present in the former species.

Hab. U.S.A., Texas. *Exp.* 26 millim. This species is unknown to me; figured from a drawing from type in Coll. Brooklyn Soc. Arts and Sciences.

Genus STOMAFRONTIA.

Type.

Stomafrontia, Hmpsn. Ann. S. Afr. Mus. iii. p. 436 (1905) ... *albifasciata.*

Proboscis absent; palpi porrect, very short and not reaching as far as frons, moderately fringed with scales below; frons with large round corneous prominence with raised edges, the upper edge produced to a beak-like process, a corneous plate below it; eyes large, round; antennæ of female serrate; thorax clothed with hair and hair-like scales and without crests; tibiæ smoothly scaled; abdomen without crests. Fore wing long and narrow, the apex produced and acute, the termen obliquely curved and not crenulate; vein 3 from well before angle of cell; 5 from just above angle; 6 from below upper angle; 7, 8, 9, 10 stalked; 11 from cell. Hind wing with the cell long; veins 3, 4 from angle; 5 obsolescent from just below middle of discocellulars; 6, 7 strongly stalked; 8 anastomosing with the cell to middle, then approximated to it to extremity.

3840. Stomafrontia albifasciata.

Stomafrontia albifasciata, Hmpsn. Ann. S. Afr. Mus. iii. p. 437 (1905).

♀. Head and thorax white mixed with rufous; palpi except at base, frons and antennæ brown; pectus and legs suffused with brown; abdomen ochreous, white at base. Fore wing white, the costal area irrorated with golden brown, the inner half from cell to inner margin suffused with golden brown leaving a pure white fascia in lower part of cell and thence to near termen; an oblique

golden brown fascia diffused on inner side from costa before apex to upper angle of cell defined by white on outer side indented by the slight dark streaks on the veins of terminal half, the terminal area

Fig. 48.—*Stomafrontia albifasciata*, ♀. ½.

irrorated with golden brown. Hind wing pure white. Underside of fore wing suffused with golden brown; hind wing white, the costal area tinged with golden brown.

Hab. Natal, Mooi R., 2 ♀ type; Cape Colony, Brak Kloof (*G. White*), 1 ♀. *Exp.* 38 millim.

Genus **CEPHALOSPARGETA.**

Type.

Cephalospargeta, Möschl. Abh. Senck. Ges. xvi. p. 119 (1890)..... *elongata.*

Proboscis fully developed; palpi porrect to just beyond frons which has a large rounded prominence with raised edges; eyes large, round; antennæ of male laminate; thorax clothed chiefly with scales and without crests; tibiæ moderately fringed with hair, the spurs long; abdomen without crests. Fore wing long and narrow, the apex rounded, the termen obliquely curved and not crenulate; vein 3 from near angle of cell; 4, 5 from angle; 6 from upper angle; 7, 8, 9, 10 stalked; 11 from cell. Hind wing with veins 3, 4 stalked; 5 obsolescent from middle of discocellulars; 6, 7 stalked; 8 approximated to the cell to middle.

*3841. Cephalospargeta elongata.

Cephalospargeta elongata, Möschl. Abh. Senck. Ges. xvi. p. 120 (1890); Kirby, Cat. Lep. Het. p. 378.

♂. Head and thorax ochreous white; palpi greyish yellow, the head and tegulæ with brown scales mixed; abdomen greyish yellow, the ventral surface white. Fore wing ochreous white mixed with

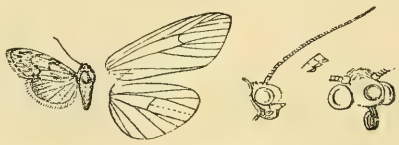


Fig. 49.—*Cephalospargeta elongata*, ♂. ½.

grey; two indistinct sinuous dark antemedial lines; a brown discoidal point; an indistinct double postmedial line excurved to vein 4 and angled inwards in submedian fold; an indistinct curved subterminal series of brown points; a terminal series of black points.

Hind wing white, the terminal area suffused with ochreous narrowing to tornus.

♀. Fore wing with diffused dark scales beyond the ante- and postmedial lines.

Hab. Porto Rico, type † ♂ ♀ in Mus. Berlin. *Exp.* ♂ 22, ♀ 24 millim.

Genus **PROTHRINAX**, nov.

Type, *P. luteomedia.*

Proboscis small, aborted; palpi porrect, very short, not reaching as far as the frontal prominence and moderately fringed with hair below; frons with long bifid plate at middle excised in front and with long triangular plate below it; eyes large, round; antennæ of male minutely ciliated; thorax clothed almost entirely with scales, the metathorax with decumbent crest; the patagia slightly turned up at extremity; tibiæ moderately fringed with hair; abdomen without crests. Fore wing with the apex rounded, the termen obliquely curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 stalked; 8 anastomosing with the cell near base only.

3842. **Prothrinax luteomedia.**

Aleptina luteomedia, Smith, Trans. Am. Ent. Soc. xxxiii. p. 136 (1907).

♂. Head and thorax black mixed with brown and grey; tegulæ mostly grey; pectus and legs tinged with brown, the tarsi blackish; abdomen ochreous suffused with blackish. Fore wing grey-white irrorated with black-brown, a pale ochreous fascia irrorated with rufous from base of costa through submedian interspaces to subterminal line and thence obliquely to termen from below apex to vein 3; antemedial line very indistinct, double, curved, traversing a patch of blackish suffusion towards costa and almost obsolete in submedian interspace; claviform elongate, faintly defined by rufous;

Fig. 50.—*Prothrinax luteomedia*, ♂. ½.

orbicular small, round, white defined by black and with brownish centre; reniform grey-white indistinctly defined, its lower extremity angled inwards to orbicular and open towards base, some white suffusion beyond it obliquely to costa near apex and the veins on it with slight dark streaks; postmedial line obsolete towards costa, slight and very obliquely incurved from vein 4 to inner margin; subterminal line white defined on inner side by red-brown, arising from termen above vein 3, oblique and slightly waved to vein 2, erect to vein 1, then bent inwards to postmedial line; an oblique

black streak from apex and terminal series of black points; cilia intersected by blackish streaks. Hind wing white, the veins tinged with brown; traces of a discoidal point and postmedial and subterminal lines; a terminal series of black points; the underside irrorated with a few black scales, a small discoidal spot, postmedial series of minute streaks on the veins, and terminal series of small lunules.

Hab. U.S.A., Arizona, Phœnix (*Kunzé*), 1 ♂, Yavapai Co., Baboquavaria Mts. *Exp.* 26 millim.

Genus **COPIBRYOPHILA.**

Type.

Copibryophila, Smith, Pr. U.S. Nat. Mus. xxii. p. 416 (1900) ..... *angelica.*

Proboscis fully developed; palpi obliquely upturned, slender, the 2nd joint moderately scaled, the 3rd rather long; frons with large rounded prominence with shovel-shaped plate at extremity and trifid corneous plate below it; eyes large, round; antennæ of female minutely ciliated; thorax clothed almost entirely with scales, the prothorax without crest, the metathorax with large rounded crest; tibiæ smoothly scaled; abdomen without crests. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell to near middle.

*3843. Copibryophila angelica.

Copibryophila angelica, Smith, Pr. U.S. Nat. Mus. xxii. p. 416 (1900); Dyar, Cat. Lep. N. Am. p. 107.

♀. Head and thorax grey suffused with brown and mixed with some fuscous; tarsi fuscous with pale rings; abdomen whitish dorsally faintly tinged with brown. Fore wing whitish tinged and irrorated with brown, the medial area suffused with brown to end of cell; subbasal line represented by a dark striga from costa with some whitish on its outer edge; antemedial line black defined by white on inner side, oblique, waved; claviform dark, defined by

Fig. 51.—*Copibryophila angelica*, ♀. ½.

black at extremity; orbicular and reniform whitish defined by black at sides only, the former round, the latter quadrate, a blackish patch between them; postmedial line black, bent outwards and almost obsolete below costa, angled inwards in discal fold, below vein 4 bent inwards and almost obsolete to below angle of cell, then erect and defined by whitish on outer side, some whitish points with

fuscous between them beyond it on costa; subterminal line whitish defined by fuscous suffusion on inner side, angled inwards below costa, outwards at veins 7, 6, 4, 3 and incurved at discal fold and below vein 3; the termen strongly suffused with brown on apical half and with terminal series of black points. Hind wing whitish, uniformly tinged with brown, the cilia white.

Hab. U.S.A., California, cotype † ♀ in Coll. J. B. Smith. *Exp* 24 millim.

Genus **PRODICELLA**, nov.

Type, *P. darena*.

Proboscis fully developed; palpi obliquely upturned, the 2nd joint reaching about to middle of frons and moderately fringed with hair in front, the 3rd moderate; frons with large rounded prominence with corneous shovel-shaped plate at middle and triangular plate below it; eyes large, round; antennæ of male almost simple; thorax clothed chiefly with scales, the prothorax without crest, the metathorax with rounded decumbent crest; tibiæ slightly fringed with hair; abdomen without crests. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 stalked; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell to one-third length.

3844. **Prodicella darena.**

Thalpochares darena, Druce, Biol. Centr.-Am., Het. ii. p. 496, pl. 95. f. 21 (1898).

Head and thorax red-brown mixed with ochreous white; tarsi banded with brown; abdomen white slightly tinged with brown. Fore wing ochreous whitish suffused with red-brown; the medial area, except beyond the reniform, and the terminal area darker red-brown; some dark red-brown on base of costa with a pale striga on it representing the subbasal line; antemedial line black-brown with pale suffusion before it, almost straight and erect; orbicular and reniform small, with slight whitish annuli incompletely defined

Fig. 52.—*Prodicella darena*, ♂. ½.

by dark brown, the former round, a dark streak before and between them in discal fold; postmedial line dark brown defined by whitish on outer side, obsolescent except beyond the cell and below vein 2, bent outwards below costa, then very minutely waved, below vein 4 bent inwards to below end of cell, then erect, same pale points beyond it on costa; an indistinct pale subterminal line with dark brown patch before it on costal area, excurved below vein 7 and at middle; a terminal series of blackish striæ. Hind wing white, the

terminal area tinged with rufous; the underside with the costal and terminal areas tinged with yellowish and slightly irrorated with rufous, a slight red-brown postmedial mark on costal area.

Hab. Mexico, Presidio (*Forrer*), 3 ♂, 1 ♀ type, Godman-Salvin Coll. *Exp.* 20 millim.

Genus ESCARIA.

Type.

Escaria, Grote, Papilio, ii. p. 186 (1882) ..... *clauda.*

Proboscis aborted, minute; palpi obliquely porrect, short, the 2nd joint moderately fringed with hair; frons with long corneous heart-shaped process with raised edges and corneous plate below it; eyes large, round; antennæ of male ciliated; thorax clothed almost entirely with scales and without crests; tibiæ slightly fringed with hair; abdomen without crests. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

3845. Escaria clauda.

Escaria clauda, Grote, Papilio, ii. p. 186 (1882); Smith, Cat. Noct. N. Am. p. 302.

Head and thorax reddish ochreous mixed with black; tarsi blackish with pale rings; abdomen reddish ochreous. Fore wing ochreous irrorated with rufous and some blackish; subbasal line blackish, excurved below costa and cell, angled inwards in cell and ending at vein 1; antemedial line with double black spots at costa, then blackish defined on inner side by ochreous, waved, angled inwards on vein 1; claviform a small blackish mark; orbicular

Fig. 53.—*Escaria clauda*, ♂. $\frac{3}{2}$.

small, round, ochreous defined by some black scales; reniform an ochreous bar defined by some black scales; postmedial line blackish slightly defined on outer side by ochreous, bent outwards below costa, then incurved, slightly excurved at median nervules, then incurved and somewhat dentate, some slight pale points beyond it on costa; subterminal line pale defined on inner side by rufous, oblique towards costa, excurved below vein 7 and at middle; a fine black terminal line; cilia fuscous mixed with some ochreous and with a slight dark line at middle. Hind wing ochreous tinged with brown especially on terminal area; a slight discoidal spot,

indistinct sinuous postmedial line; a dark terminal line; cilia pale; the underside ochreous, the costal and terminal areas irrorated with brown, a slight discoidal lunule and curved postmedial line.

Hab. U.S.A., Arizona, Phœnix, 1 ♂, 1 ♀. *Exp.* 26 millim.

Genus **ALEPTINA.**

Type.

Aleptina, Dyar, Can. Ent. xxxiv. p. 105 (1902) ..... *inca.*

Proboscis aborted and rather slight; palpi obliquely porrect, slenderly scaled and extending to extremity of the large flattened corneous plate at middle of frons, a corneous plate below the frons excised in front; eyes large, round; antennæ of male somewhat laminate and almost simple; thorax clothed almost entirely with scales and without crests; tibiæ slightly fringed with hair; abdomen without crests. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 shortly stalked; 5 obsolescent from well below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell to towards middle.

3846. **Aleptina inca.**

Aleptina inca, Dyar, Can. Ent. xxxiv. p. 105 (1902); id. Cat. Lep. N. Am. p. 107.

Head and thorax black mixed with white, the frons above and back of head mostly white; pectus white; tarsi black ringed with white; abdomen brownish ochreous, the ventral surface whitish irrorated with brown. Fore wing bluish grey irrorated with black and white, the basal area whitish except before costal half of

Fig. 54.—*Aleptina inca*, ♂. $\frac{3}{2}$.

antemedial line, which is double, black, angled outwards below costa and cell; claviform slight, narrow, elongate, defined below by black and white; orbicular with brown centre and white annulus defined by black, large, round; reniform grey with faint white annulus, undefined, an oblique white shade from costa before subterminal line to upper part of reniform, the veins on it with dark streaks; postmedial line very indistinct, dark, strongly bent outwards below costa, then double, oblique, sinuous; subterminal line very indistinct, whitish, crossed by an oblique blackish shade from apex to its inner side at vein 4, excurved below vein 7 and at middle, then incurved and the white more prominent; the termen whitish with a series of black points; cilia with a blackish patch

at tornus. Hind wing white, the veins and apical area tinged with brown, the terminal area tinged with brown in female; the underside with the apical area slightly irrorated with brown.

Hab. U.S.A., Texas, Arizona, Yuma Co., 1 ♂, 1 ♀. *Exp.* 24 millim.

Genus **PRORACHIA**, nov.

Type, *P. daria.*

Proboscis aborted, small; palpi porrect, hardly reaching as far as the large rounded frontal prominence with transverse corneous ridge and corneous plate below it; eyes large, round; antennæ of male ciliated; thorax clothed almost entirely with scales, the prothorax without crest, the metathorax with decumbent crest; tibiæ smoothly scaled; abdomen without crests. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell to about one-third length.

3847. **Prorachia daria.**

Thalpochares daria, Druce, Biol. Centr-Am., Het. ii. p. 497, pl. 95. f. 29 (1898); Dyar, Cat. Lep. N. Am. p. 211.

Head and thorax dark brown mixed with grey; legs dark brown, the tarsi slightly ringed with white; abdomen rufous. Fore wing grey suffused with red-brown; subbasal line represented by slight double dark striæ from costa; antemedial line slight, blackish, defined on inner side by whitish, minutely waved from costa to median nervure, then angled outwards in submedian fold and

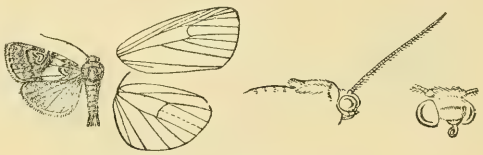


Fig. 55.—*Prorachia daria*, ♂. ½.

inwards on vein 1; claviform and orbicular absent; reniform with whitish annulus defined by black except above, its centre grey irrorated with brown and defined by brown, constricted at middle and expanding above; an indistinct oblique brown medial line; postmedial line double filled in with grey, the inner line blackish, the outer indistinct except at costa, strongly bent outwards below costa, very slightly incurved at discal fold, oblique and sinuous below vein 4, some whitish points beyond it on costa; subterminal line indistinct, grey defined by brown suffusion on inner side, excurved below 7 and at middle; a terminal series of slight black points. Hind wing whitish suffused with red-brown, the veins and terminal area darker; cilia whitish tinged with brown, a slight brown line near base; the underside whitish tinged with rufous, the

costal area irrorated with rufous, a slight waved postmedial line from costa to vein 5 and faint diffused terminal band.

Ab. 1. Fore wing with the reniform more prominently white.

Ab. 2. Fore wing with black patches before and beyond the reniform.

Hab. U.S.A., Arizona, Huachuca Mts., 1 ♀, Prescott (*Kunzé*), 1 ♂, 1 ♀; Mexico, Jalapa (*Trujillo*), 7 ♂, 1 ♀ type, Presidio (*Forrer*), 1 ♂, Godman-Salvin Coll. *Exp.* 24 millim.

Genus **HADENELLA**.

	Type.
Hadenella, Grote, Papilio, iii. p. 123 (1883)	*pergentilis*.

Proboscis fully developed; palpi obliquely upturned, slender, short, roughly scaled; frons with large corneous prominence with raised edges, long truncate central process hollowed out in front and corneous plate below it; eyes large, rounded; antennæ of male ciliated; head and thorax clothed chiefly with scales, the metathorax with spreading crest; tibiæ moderately fringed with hair; abdomen with dorsal crest at base only. Fore wing long and narrow, the apex rounded, the termen obliquely curved; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below middle of discocellulars; 6, 7 stalked; 8 anastomosing with the cell near base only.

A. Fore wing with pinkish-white fascia below the cell from base to subterminal line ..... *rectiradiata*.
B. Fore wing without pinkish-white fascia below the cell..... *pergentilis*.

3848. **Hadenella rectiradiata.** (Plate CXXXII. fig. 31.)

Tarache rectiradiata, Hmpsn. Ann. S. Afr. Mus. ii. p. 391 (1902).

♀. Head and thorax purplish grey mixed with some pinkish and dark brown; tegulæ with blackish lines near base and tips; patagia edged with black; vertex of thorax with blackish streak; pectus and legs brownish white, the tarsi blackish ringed with white; abdomen brownish ochreous, the ventral surface white. Fore wing purplish grey with slight dark irroration, the veins streaked with black; an oblique black streak above inner margin before middle; a pinkish-white fascia below the cell and vein 3 from base to subterminal line, and a short fascia beyond the cell above and below vein 5; subbasal and antemedial lines absent; orbicular and reniform small and close together, whitish defined by black and with some brown in centres, the former round; postmedial line represented by a slight striga across vein 1; subterminal line slight, whitish, minutely waved, incurved below vein 3, with a whitish patch beyond it at apex and two small spots above tornus; a series of slight whitish lunules on termen; cilia chequered yellowish-white and black. Hind wing whitish tinged with brown, the terminal area suffused with brown; cilia whitish; the underside ochreous white slightly irrorated with brown, a dark discoidal point and terminal lunulate line.

Hab. Bechuanaland, N'gami (*Lugard*), 1 ♀ type. *Exp.* 32 millim.

3849. Hadenella pergentilis.

Hadenella pergentilis, Grote, Papilio, iii. p. 123 (1883); Smith, Cat. Noct. N. Am. p. 164.

♂. Head and thorax white mixed with brown and fuscous scales; frons with lateral black bars; antennæ ringed black and white; abdomen ochreous irrorated with black. Fore wing whitish irrorated with fuscous and tinged with ochreous except towards costa, the veins with slight dark streaks; subbasal line represented by an oblique black striga from costa; antemedial line defined by whitish on inner side, dentate, strongly angled outwards in submedian fold and above inner margin; claviform very large, extending almost to postmedial line, defined by brown above and fuscous below; orbicular small with white annulus defined by fuscous; reniform with fuscous centre and slight whitish

Fig. 56.—*Hadenella pergentilis*, ♂. ¾.

annulus defined by black, an oblique fuscous shade from costa to reniform; postmedial line indistinct, bent outwards below costa, then dentate, oblique below vein 4; subterminal line white defined by rufous on inner side and by an oblique blackish wedge-shaped patch from costa, somewhat angled outwards at veins 7 and 4 and incurved at submedian fold; the terminal area darker except at apex; cilia white with black line near base and blackish tips. Hind wing whitish tinged with ochreous brown, the veins darker; a fine black terminal line; cilia white with a fuscous line near base; the underside sparsely irrorated with brown, a discoidal spot and indistinct curved postmedial line with minute dark streaks on the veins.

Hab. U.S.A., Washington, Wyoming, Colorado, Glenwood Springs, 2 ♂. *Exp.* 32 millim.

Genus **FOTELLA.**

Type.

Fotella, Grote, Can. Ent. xiv. p. 181 (1882) ..... *notalis.*

Proboscis fully developed; palpi upturned, the 2nd joint slender, reaching to middle of frons and fringed with scales in front, the 3rd short; frons with rounded prominence with corneous plate below it; eyes large, rounded; antennæ of female ciliated; head and thorax clothed with scales only, a ridge of scales between antennæ; prothorax without crest, metathorax with large spreading crest; tibiæ slightly fringed with hair; abdomen with dorsal crest at base only; build slender; wings ample. Fore wing with the apex rounded, the termen evenly curved; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with the orbicular distinct, the ante- and postmedial lines present ..... *cylindrica.*
B. Fore wing with the orbicular, ante- and postmedial lines absent ..... *notalis.*

3850. **Fotella cylindrica.**

Hadena cylindrica, Grote, Can. Ent. xii. p. 214 (1880); Smith, Cat. Noct. N. Am. p. 146.

♀. Head and thorax white mixed with red-brown and black; tarsi banded with black; abdomen ochreous irrorated with brown, the basal crest black at tip. Fore wing grey-white tinged with brown and irrorated with fuscous, the veins with fine black streaks; subbasal line black, waved, from costa to submedian fold; antemedial line double at costa, then very indistinct, waved; claviform elongate, defined by black; orbicular and reniform whitish defined by black, the former with its centre slightly irrorated with fuscous, oblique elliptical, the latter strongly tinged with fuscous; traces of

Fig. 57.—*Fotella cylindrica*, ♀. ½.

a medial line oblique from costa to below cell; postmedial line very indistinct, strongly bent outwards below costa, then minutely dentate, oblique below vein 4; subterminal line whitish slightly defined on inner side by red-brown and with a darker patch before it on costa, angled outwards at vein 7 and slightly excurved at middle; a terminal series of small black lunules. Hind wing pale ochreous; a slight discoidal lunule and curved postmedial line; a fine dark terminal line; cilia white with a slight brown line near base; the underside white irrorated with brown, a discoidal lunule, postmedial line, and terminal series of striæ.

Hab. U.S.A., Nevada, 1 ♀ type. *Exp.* 30 millim.

*3851. **Fotella notalis.** (Plate CXXVIII. fig. 13.)

Fotella notalis, Grote, Can. Ent. xiv. p. 181 (1882); Smith, Cat. Noct. N. Am. p. 195.

♀. Head and thorax olive-fuscous mixed with greyish; abdomen pale greyish ochreous. Fore wing olive-fuscous with a narrow pale terminal band; lines absent; reniform slight, white, constricted at middle. Hind wing whitish tinged with fuscous especially on terminal area; cilia white.

Hab. U.S.A., Arizona. *Exp.* 34 millim. This species is unknown to me; figured from a drawing from type in Coll. Brooklyn Soc. Arts and Sciences.

Genus CATABENA.

	Type.
Catabena, Wlk. xxxii. 631 (1865)	*lineolata*.
Turbula, Wlk. Char. Undescr. Het. p. 26 (1869)	*lineolata*.
Adipsophanes, Grote, Bull. Buff. Soc. Nat. Sci. i. p. 181 (1873)	*lineolata*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and moderately scaled, the 3rd short, porrect; frons smooth; eyes large, round; antennæ of male ciliated; thorax clothed almost entirely with scales, the tegulæ produced to a slight dorsal ridge and hood behind, the pro- and metathorax with slight spreading crests; tibiæ fringed with long hair on outer side at base; build slender; abdomen with dorsal crest at base only. Fore wing long and narrow, the apex rounded, the termen obliquely curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 from middle of discocellulars, almost obsolete; 6, 7 very shortly stalked; 8 anastomosing with the cell near base only.

A. Fore wing with black streak below base of cell.
  a. Fore wing with the reniform represented by a minute whitish spot ..... *esula*.
  b. Fore wing with the reniform absent.
    a^1. Fore wing with the orbicular represented by a slight white streak defined by black ..... *lineolata*.
    b^1. Fore wing with the orbicular absent ..... *vitrina*.
B. Fore wing without black streak below base of cell ..... *terens*.

3852. Catabena esula.

Xylina esula, Druce, Biol. Centr.-Am., Het. i. p. 297, pl. 28. f. 1 (1889).

Head and thorax brown mixed with grey-white; frons black; tegulæ with strong black lines at base and middle and slight fuscous line near tips; fore tibiæ and mid tibiæ towards base black on outer side; abdomen grey suffused with brown, the

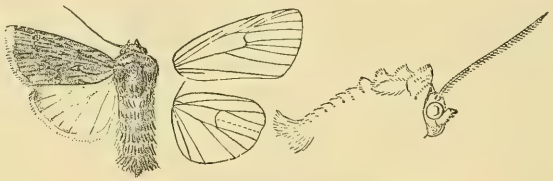


Fig. 58.—*Catabena esula*, ♂. ½.

ventral surface whitish. Fore wing brown mixed with grey-white, the veins and discal fold slightly streaked with black; a slight black streak below basal half of cell; antemedial line dentate with a long tooth below costa, then almost obsolete; orbicular represented by a minute elongate white spot on the discal blackish streak; reniform a minute whitish spot; postmedial line defined by whitish on outer side towards costa, strongly bent outwards below costa, then dentate, almost obsolete, oblique below vein 4; the interspaces of terminal area with slight dark streaks; a fine waved black terminal line; cilia brown mixed with grey. Hind-

wing white, the veins of terminal area streaked with brown; a fine brown terminal line somewhat diffused at apex; cilia brown at apex, then white with a slight brown line near base to vein 2; the underside with the costa except towards base and apical part of termen irrorated with brown.

Hab. Mexico, Tabasco (*H. H. Smith*), 1 ♂ type, Jalapa (*Trujillo*), 2 ♂, Godman-Salvin Coll.; Grenada (*H. H. Smith*), 2 ♀. *Exp.* 34 millim.

3853. Catabena lineolata. (Plate CXXVIII. fig. 14.)

Catabena lineolata, Wlk. xxxii. 631 (1865); Smith, Cat. Noct. N. Am. p. 194.
Turbula petræa, Wlk. Char. Undescr. Het. p. 26 (1869).
Adipsophanes miscellus, Grote, Bull. Buff. Soc. Nat. Sci. i. p. 181 (1873).

♂. Head and thorax white mixed with pale brown; frons black-brown; tegulæ with black-brown band at base expanding into a triangular patch at middle, a slight medial line and stronger line near tips; abdomen white faintly tinged with brown. Fore wing white, the veins and discal fold streaked with black, the lower part of cell and the interspaces beyond the cell with diffused reddish-brown streaks; a very oblique black striga from base of costa, a black streak in submedian fold to below middle of cell and an oblique streak above inner margin near base; antemedial line represented by a very oblique black streak from costa to subcostal nervure; orbicular very narrow and elongate, white defined by black; reniform absent; traces of a waved rufous medial line; postmedial line strongly bent outwards below costa and slightly defined by white on outer side, then obsolescent with black points on the veins, very oblique below vein 4 and bent outwards at vein 1; subterminal line hardly traceable, white, dentate; a terminal series of slight dark lunules; cilia white mixed with brown. Hind wing semihyaline white, the veins of terminal area streaked with brown; a slight brown terminal line; the underside with the costal area irrorated with brown, a postmedial series of minute brown streaks on the veins.

Hab. Canada; U.S.A., Massachusetts, New York (*Packard*), 1 ♂, 1 ♀, Evans Center, 1 ♂, 2 ♀ type *miscellus*, Congs Springs, 1 ♂, Pennsylvania, Oregon, Josephine Co., Rouge R. (*Walsingham*), 1 ♂, 2 ♀, California, Sonora Co., Petaluna (*Walsingham*), 1 ♂, 3 ♀, Sta. Barbara (*d'Urban*), 1 ♂, 2 ♀; hab. ign., 2 ♂ type and type *petræa*. *Exp.* 28–34 millim.

Larva. Head small, mottled with brown, leaving three green lines on each lobe. Body cylindrical, slender, the feet of joints 7 and 8 small; green, mottled with brown; dorsal, subdorsal and substigmatal lines, rather broad, whitish, obscure. Food-plant: *Solidago*.—H. G. D.

3854. Catabena vitrina. (Plate CXXVIII. fig. 15.)

Laphygma vitrina, Wlk. xi. 718 (1857).
Callierges divisa, Herr.-Schäff. Zool.-min. Corresp.-blatt. Regensb. 1868, p. 147.
Adipsophanes terminellus, Grote, Can. Ent. xv. p. 132 (1883); Smith, Cat. Noct. N. Am. p. 194.
Homohadena candida, Smith, Pr. U.S. Nat. Mus. xxii. p. 478 (1900); Dyar, Cat. Lep. N. Am. p. 124.

♂. Head and thorax white faintly tinged with rufous; frons with strong black bar above; tegulæ with two faint brown lines and slight black-brown dorsal streak; upper edge of patagia and metathorax with some black scales; mid tibiæ with black streak at base, the tarsi ringed with black; abdomen white slightly tinged with brown on dorsum, the anal tuft with ochreous. Fore wing white faintly mottled with yellow-brown and with slight dark irroration, the median nervure and extremity of subcostal nervure streaked with black, the terminal area suffused with brown; subbasal line represented by a very oblique black striga from costa, the antemedial line by an oblique striga from costa and two points on vein 1; orbicular and reniform absent; traces of a diffused waved oblique line from lower angle of cell to inner margin; postmedial line slight, blackish and bent outwards below costa, then represented by two black streaks beyond the cell and below vein 4 by an incurved series of black points; traces of a white subterminal line excurved at middle and bent outwards to tornus; the terminal area with series of black streaks in the interspaces, above and below vein 5 extending to well before subterminal line; cilia fuscous intersected with white at base, brown at tips. Hind wing hyaline white; the termen suffused with fuscous at apex, the extremities of veins streaked with fuscous and a narrow terminal line from apex to vein 2; cilia white, fuscous at apex.

♀. Fore wing with strong black streak along median nervure and vein 4 from base to subterminal line.

Ab. 1. Fore wing more uniform bluish grey-white without brown suffusion on terminal area, the male with hardly a trace of black streak on median nervure, the female with slight black streak.—Bahamas, Cuba.

Hab. U.S.A., Texas, Kerrville, 2 ♂, 3 ♀, San Antonio, 2 ♀, Arizona, Huachuca Mts., 1 ♀; Bahamas, Abaco (*Bonhote*), 1 ♀; Cuba, Santiago (*Schaus*), 2 ♂, 2 ♀; Haiti (*Tweedie*), 3 ♂ type; Grenada (*H. H. Smith*), 1 ♂. *Exp.* 24–26 millim.

3855. Catabena terens. (Plate CXXVIII. fig. 16.)

Laphygma terens, Wlk. xi. 720 (1857).

Fore wing grey-white mixed with brown; palpi with brown marks at sides of 2nd and 3rd joints; frons with black bar above; tegulæ with black line near base and white line near tips; fore

tibiæ on inner side and mid tibiæ on outer side at base streaked with black, the tarsi ringed with blackish; abdomen white dorsally suffused with fuscous brown leaving slight white segmental lines, the anal tuft ochreous. Fore wing grey-white irrorated and in parts suffused with fuscous brown, the veins with slight dark streaks; subbasal line represented by a very oblique black striga from costa; an oblique black streak above inner margin before the antemedial line, which is represented by an oblique series of short black streaks in the interspaces, with a somewhat whiter patch beyond it from costa to median nervure; orbicular absent; reniform a faint whitish patch; postmedial line blackish and strongly bent outwards below costa, then almost obsolete, dentate and produced to black points on the veins, oblique below vein 4 and with a black spot beyond it in submedian interspace; subterminal line represented by a minute black streak below apex, brownish spots below veins 7 and 6, with a short black streak below the latter and short black streaks above and below vein 2; cilia chequered blackish and white at base, with slight brown medial line and white tips. Hind wing hyaline white with fuscous patch at apex and slight streaks on the extremities of veins; cilia white, fuscous at apex; the underside with the costal area slightly irrorated with brown towards the apical black patch.

Hab. Venezuela (*Dyson*), 1 ♀ type; Brazil, Organ Mts., Tijuca (*Wagner*), 1 ♂, Petropolis (*Doer*), 2 ♂, Rio Janeiro, 1 ♂; Paraguay, Sapucay (*Foster*), 1 ♀; Peru, Arequipa. *Exp.* 26–30 millim.

Genus CHIRIPHA.

	Type.
Chiripha, Wlk. ix. 200 (1856)	*involuta.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and moderately fringed with hair, the 3rd short, upturned; frons smooth, with ridge of hair above; eyes large, rounded; antennæ of male bipectinate with short branches, the apex serrate; head and thorax clothed with hair and hair-like scales, the pro- and metathorax with spreading crests; tibiæ moderately fringed with hair; abdomen with dorsal crest at base only. Fore wing with the apex rather produced and acute, the termen obliquely curved and slightly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

3856. Chiripha involuta.

Chiripha involuta, Wlk. ix. 201 (1856); Hmpsn. Moths Ind. ii. p. 230.

Head and thorax ochreous white mixed with some brown; palpi brown except 2nd joint in front; sides of frons black; tibiæ streaked with brown, the tarsi brown with slight pale rings; abdomen ochreous white suffused and irrorated with brown. Fore wing yellow-brown; the veins brown defined on each side by white streaks; a white fascia below costa from base to apex, the

costa brown with slight black streaks in the interspaces; a blackish fascia below basal half of median nervure and another above inner margin from near base to middle; a slight subbasal white streak below costa, a large triangular mark below cell and an oblique striga above inner margin; an oblique antemedial white striga from vein 1 to inner margin, on which there is a white streak; orbicular and reniform defined by yellowish white, the former very small, oblique wedge-shaped, the latter produced at upper extremity; a downcurved white streak from median nervure just beyond the triangular mark bent upwards to vein 2 beyond middle; some blackish streaks in the interspaces beyond the cell; a white

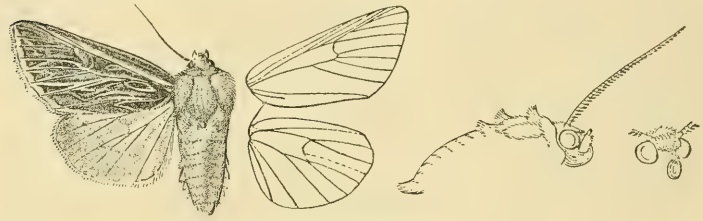


Fig. 59.—*Chiripha involuta*, ♂. ½.

streak from lower angle of cell curved upwards to vein 5, then downwards to termen at vein 4; some blackish subterminal wedge-shaped marks in the interspaces; a white terminal band with oblique white streaks before it below veins 7, 4, and 3, the last longer and ending above the bent up streak in submedian interspace; a fine dark terminal line; cilia brown with yellowish white line at base. Hind wing whitish, the marginal areas broadly suffused with brown, the veins brown; a dark discoidal spot and diffused postmedial line; cilia white, brown at tips; the underside yellowish white, the costal and terminal areas tinged and irrorated with brown, a blackish discoidal lunule, diffused postmedial line, and fine black terminal line.

Hab. Punjab, Kulu (*Hocking*), 1 ♀, Kasauli, 1 ♀. *Exp.* 52 millim. Type † ♂ in Mus. Oxon.

Genus **CALOGRAMMA**.

Type.

Calogramma, Guen. Noct. i. p. 165 (1852)..... *festiva*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and broadly scaled, the 3rd short; frons smooth; eyes large, round; antennæ of male ciliated; thorax clothed almost entirely with scales, the prothorax without distinct crest, the metathorax with double crest; tibiæ broadly fringed with hair; abdomen with dorsal crests on basal segments. Fore wing with the apex rounded, the termen evenly curved and slightly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from well below middle of disco-cellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

3857. Calogramma festiva.

Noctua festiva, Donov. Ins. New Holland, pl. 36 (1805); Moore, Lep. Ceyl. iii. p. 21, pl. 146. f. 6; Hmpsn. Moths Ind. ii. p. 249.
Polia picta, Guér. Voy. de Coquille, ii. p. 285, pl. 19. f. 7 (1830); Boisd. Voy. de l'Astrolabe, Lép. p. 241 (1832).

Head and thorax pale orange-yellow largely suffused with crimson; palpi crimson except at extremities of the joints; frons with crimson bar; tegulæ with crimson medial line; patagia with oblique black streak at base of upper edge, oblique medial crimson bar and crimson tips; pectus and tibiæ mostly crimson, the tarsi yellowish white; abdomen yellowish white, the basal crest tinged with orange. Fore wing yellowish white, a large truncate triangular crimson patch extending on costa from middle to near apex and down to median nervure and vein 4, with a crimson band from it to inner margin on inner side of postmedial line; slight crimson streaks on base of costa, median nervure, and vein 1; subbasal line represented by a black spot on costa and striga from cell; a double very

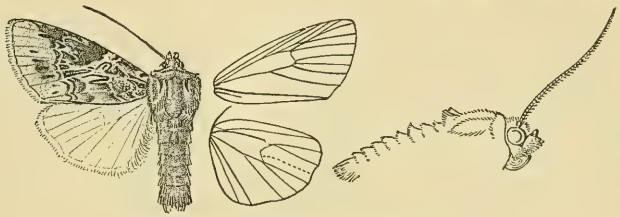


Fig. 60.—*Calogramma festiva*, ♂. ½.

oblique black line from subcostal nervure at antemedial line to vein 1 at the subbasal striga; crimson streaks on costa and subcostal nervure, two black spots below costa, an oblique streak below submedian fold and angled mark above inner margin before the antemedial line, which is double, black, angled outwards below costa, then minutely waved, excurved at submedian fold and above inner margin; claviform narrow and elongate, defined by black; a black streak above median nervure to the orbicular, which is oblique defined by black at sides and with slight brown line in middle, two slight black streaks below it defining base of vein 1; reniform large defined by black, interrupted by pale streaks at lower angle of cell, its centre with crimson patch partly defined by black, its upper extremity produced to a long acute point and its outer edge angled inwards at middle, some black before it in upper part of cell and diffused black streaks from it to postmedial line in the interspaces; postmedial line double filled in with pale yellow, strongly bent outwards below costa, then oblique, minutely waved, incurved at discal and submedian folds and excurved at middle, some white points beyond it on costa and two slight black marks below costa on edge of the crimson patch; subterminal line represented by black points above veins 6 and 5 and above and below

submedian fold and larger spots above veins 4, 3, 2, with crimson streaks between them on veins 4, 3 from the postmedial line. Hind wing pure white, the costal and inner areas tinged with yellow, a slight yellow terminal line; the underside with the terminal half of costa suffused with crimson.

Hab. ? Punjab, 1 ♂; Ceylon (*Templeton*), 1 ♂, 1 ♀; Nicobars (*Rogers*), 1 ♀, Little Nicobar, 1 ♂; Singapore (*Ridley*), 1 ♂, 3 ♀; Philippines, Luzon, Mindanao; Trobriand Is., Kiriwini (*Meek*), 2 ♂; New Caledonia, 1 ♂; N. S. Wales, Sydney (*Mathew*, *Raynor*), 7 ♂, 7 ♀. *Exp.* 42–52 millim.

Larva. Semper, Schmett. Philippines, p. 516, pl. Q. ff. 4, 5.

Brown irrorated with black and white, the 4th somite with black band; dorsal and subdorsal lines whitish; stigmata with white spots defined by black above; a broad yellow substigmatal fascia; head and ventral surface red-brown. Food-plants: *Liliaceæ*. 10–4.

Genus **PRODENIA.**

	Type.
Prodenia, Guen. Noct. i. p. 159 (1852)	*androgea*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and broadly scaled, the 3rd short; frons smooth; eyes large, round; antennæ of male ciliated; thorax smoothly clothed almost entirely with scales, the prothorax without crest, the metathorax with divided crest; tibiæ moderately fringed with hair; abdomen with dorsal crests on basal segments. Fore wing long and narrow, the apex rounded, the termen evenly curved, crenulate; veins 3 and 5 typically from near angle of cell; 6 from upper angle or from areole; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anatomosing with the cell near base only.

Sect. I. Fore wing of male with veins 2 and 3 almost from a point near lower angle of cell, vein 5 from just below middle of discocellulars.

3858. **Prodenia rubrifusa**, n. sp.

♂. Head and thorax bright rufous; palpi yellowish in front and at tips and with blackish marks at sides of 1st and 2nd joints; fore and mid tibiæ with some black points, the tarsi with black bands; abdomen ochreous suffused with rufous. Fore wing bright rufous slightly irrorated with black, some yellowish on basal area, on costal area beyond antemedial line, and on postmedial inner area; subbasal line represented by a faint diffused oblique yellowish line from costa to median nervure, then inwardly oblique and double, then by a slight black line angled outwards on vein 1; some fuscous suffusion from below costa to vein 1 before the antemedial line, which is indistinct, yellowish, angled outwards below costa, excurved in submedian interspace and retracted to inner margin; orbicular represented by a quadrate yellowish patch defined by black on outer side and with oblique diffused yellowish fascia from its lower extremity on and above vein 2 to postmedial line; reniform obsolete, its produced upper extremity traceable and

slightly defined by black, a short black streak on vein 5 from the black edge of orbicular, then curved round and becoming the oblique waved medial line; postmedial line indistinct, blackish, below vein 3 defined by whitish on inner side, bent outwards below costa, then oblique, incurved at discal and submedian folds and bent outwards to inner margin, some slight pale points beyond it on costa; an indistinct diffused oblique greyish fascia from apex to middle of

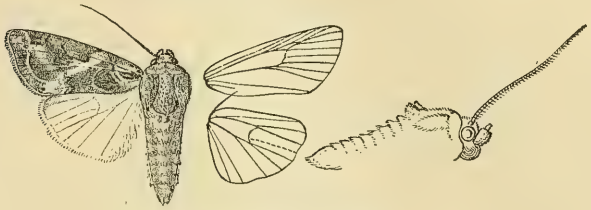


Fig. 61.—*Prodenia rubrifusa*, ♂. ½.

postmedial line; subterminal line whitish, angled outwards at vein 7, excurved at middle and slightly angled inwards in submedian fold; traces of a series of yellowish striæ just before termen; a terminal series of slight black lunules; cilia rufous with fine yellow line at base and blackish tips. Hind wing semihyaline white, the apex tinged with brown; a fine brown terminal line from apex to vein 2; the underside with the costal area suffused with fiery red, a series of black points on termen from apex to vein 3.

Hab. Jamaica, Runaway Bay (*Walsingham*), 1 ♂ type. *Exp.* 46 millim.

Sect. II. Fore wing of male with the neuration normal.

A. Fore wing with the upper extremity of reniform produced to a very long narrow point defined on lower side by an oblique white mark ..... *dolichos.*

B. Fore wing with the upper extremity of reniform produced to a shorter, broader, and less oblique point defined by white.

a. Fore wing with curved white streak above medial part of inner margin ..... *pulchella.*

b. Fore wing without curved white streak above medial part of inner margin.

a^1. Fore wing with the white streak on vein 2 continued to subterminal line ..... *ardrogea.*

b^1. Fore wing with the white streak on vein 2 ending at postmedial line.

a^2 Fore wing with the postmedial line bent outwards from submedian fold to inner margin ..... *litura.*

b^2. Fore wing with the postmedial line bent outwards from vein 1 to inner margin.

a^3. Fore wing with more or less distinct diffused oblique violaceous white fascia from apex more prominent in male.

a^4. Fore wing very long and narrow, the whole medial area suffused with ochreous in male, the female with some ochreous on middle of inner margin ..... *latifascia.*

b^4. Fore wing shorter and broader, the medial area suffused with ochreous in male, in female without ochreous.

a^5. Fore wing largely suffused with fuscous, the violaceous white fascia from apex prominent in male ..... *ornithogalli.*

b^5. Fore wing paler brown, the violaceous white fascia from apex slight ..... *præfica.*

b^3. Fore wing without violaceous white fascia from apex ..... *marima.*

3859. Prodenia dolichos.

Noctua dolichos, Fabr. Ent. Syst. 3. 2, p. 95 (1794).
Phalæna commelinæ, Smith & Abbot, Ins. Georgia, ii. p. 189, pl. 95 (1797); Druce, Biol. Centr.-Am., Het. i. p. 268; Smith, Cat. Noct. N. Am. p. 169.

Head and thorax ochreous mixed with rufous; palpi with red-brown bar near extremity of 2nd joint; frons with red-brown bar above; vertex of head mostly red-brown; tegulæ with black-brown band at base and medial line and red-brown band near tips; patagia edged with red-brown and with black line near upper edge; tibiæ and the 1st joint of mid tarsi streaked with red-brown; abdomen ochreous suffused with rufous. Fore wing red-brown, the basal half of costal area whitish irrorated with red-brown, an ochreous

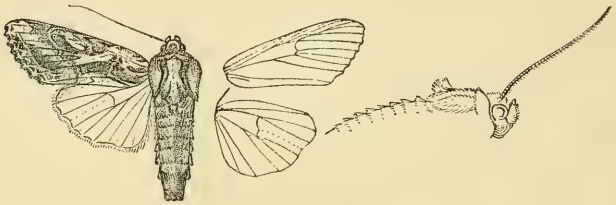


Fig. 62.—*Prodenia dolichos*, ♂. ½.

fascia on inner margin from before antemedial line, where it narrows to a point, to termen where it expands to submedian fold; an oblique whitish and blackish striga from base of costa; subbasal line represented by an oblique whitish striga from costa defined on each side by blackish striæ; an oblique whitish streak from subcostal nervure at antemedial line to vein 1, double below submedian fold; antemedial line rather indistinct, double filled in with whitish, minutely waved, bent inwards to inner margin; claviform slightly defined by black, elongate and extending to the medial line; orbicular ochreous white defined by black except below, with brown line in centre and ochreous bar on outer edge, oblique and with oblique ochreous bar from its lower extremity above and below

vein 2 to medial line; the extremity of median nervure and bases of veins 3, 4 to postmedial line streaked with ochreous; reniform slightly defined by black and by ochreous on inner side, its upper extremity very strongly produced, defined by ochreous below and with slight ochreous streaks on it on veins 7, 6; a slight medial line from vein 5 beyond lower angle of cell, angled inwards to the claviform in submedian fold and outwards on vein 1; postmedial line double filled in with yellowish, strongly bent outwards below costa, then oblique, sinuous; a broad oblique pale patch from apex to middle of postmedial line, whitish on apical area, rufous on postmedial area; a slightly curved whitish subterminal line from the pale patch to submedian fold, where it is angled inwards, with black streaks before it in the interspaces, short above, longer below, and with a series of yellowish and black striæ beyond it; a terminal series of small black lunules; cilia yellowish mixed with brown, intersected with whitish and with a dark line through them. Hind wing hyaline white, the veins brownish towards termen, the apex tinged with brown; a brown terminal line from apex to vein 2; the underside with the costal area irrorated with brown, a terminal series of small black lunules from apex to vein 2.

Hab. U.S.A., Massachusetts, Distr. of Columbia, 2 ♂, Illinois, Georgia, 1 ♂, 2 ♀, Texas; Mexico, Jalapa (*Hoege*, *Trujillo*), 1 ♂, 2 ♀, Presidio (*Forrer*), 1 ♂, Coatepec (*Brooks*), 1 ♂, Yucatan (*Gaumer*), 1 ♀, San Blas (*Walker*), 1 ♀; Guatemala, Pantaleon (*Champion*), 1 ♂, Cerro Zunil (*Champion*), 1 ♂, Coatepeque (*Champion*), 1 ♂, Vera Paz (*Champion*), 1 ♂; Nicaragua, Chontales, (*Janson*), 1 ♂; Br. Honduras, Cayo (*Blancaneau*), 1 ♀; Costa Rica, Candalaria Mts. (*Underwood*), 1 ♂, 2 ♀; Panama, Chiriqui (*Champion*, *Ribbé*), 2 ♀, Bugaba (*Champion*), 1 ♂, 1 ♀, Godman-Salvin Coll., Cana Mines (*Tylecote*), 1 ♀; Jamaica, Moneague (*Walsingham*), 1 ♂, Runaway Bay (*Walsingham*), 1 ♂, Castleton (*Kaye*), 1 ♂; St. Lucia (*Cowie*), 1 ♂, 2 ♀; St. Vincent (*H. H. Smith*), 1 ♀; Grenada (*H. H. Smith*), 2 ♀; Cuba; Haiti (*Tweedie*), 1 ♀; Barbados (*Frampton*), 1 ♂, 1 ♀; Brazil, Amazons, Pará, 1 ♂, São Paulo (*Jones*), 2 ♀; Argentina, Goya (*Perrins*), 1 ♂, (*Thomas*), 2 ♂. *Exp* 42–52 millim.

Larva. Head reddish, black in front, the V-mark over clypeus contrasted. Body robust, joints 5 and 12 enlarged; brown, finely longitudinally strigose; subdorsal line yellowish white, with a row of black wedge-shaped marks above it; lateral area pale on its upper half, dark below, a black spot on joint 5; substigmatal band obsolete.—H. G. D.

3860. **Prodenia pulchella.** (Plate CXXVIII. fig. 17.)

Laphygma pulchella, Herr.-Schäff. Zool.-min. Corresp.-blatt. Regensb. 1868, p. 116.
Prodenia exquisita, Möschl. Abh. Senck. Ges. xiv. p. 41, pl. f. 23 (1884).

Head and thorax ochreous mixed with rufous; palpi with some black on 2nd and 3rd joints behind; frons with dark bar above;

tegulæ with dark medial line; patagia with black streak near upper edge; fore and mid tibiæ with slight black streaks; abdomen ochreous tinged with rufous. Fore wing rufous mixed with ochreous and in parts irrorated with black and suffused with fuscous, the basal half of costal area and the inner margin beyond antemedial line more ochreous; subbasal line represented by a very oblique ochreous striga from costa defined on each side by slight black striæ; a downcurved ochreous fascia with brown line in middle from subcostal nervure at antemedial line to vein 1 near base; some silvery grey above vein 1 before the antemedial line, which is indistinctly double filled in with ochreous, oblique from costa to submedian fold, then obsolescent and strongly retracted to inner margin; a curved whitish streak on medial area above inner margin; orbicular narrow, oblique, with red-brown centre and whitish annulus defined at sides by black, with a yellowish bar on its outer edge and oblique whitish fascia on and above vein 2 from its lower extremity to postmedial line; the extremity of median nervure and bases of veins 4, 3 streaked with whitish; reniform defined by a whitish and black bar on inner side, its upper extremity produced to a long oblique point defined by yellowish white and by black on outer side; postmedial line double filled in with yellowish, indistinct and bent outwards below costa, then oblique sinuous, incurved below vein 6 and at submedian fold; a diffused oblique violaceous whitish fascia from apex to below vein 6; subterminal line whitish, from the pale fascia to submedian fold where it is angled inwards, slightly excurved at middle with some dark brown suffusion before it and black streaks in the interspaces, short above, longer below; a fine whitish line before termen on which there is a series of black points; cilia red-brown intersected with whitish and with a fine pale line at base. Hind wing hyaline white, a dark terminal line from apex to vein 2; cilia tipped with brown towards apex; the underside with the costa slightly irrorated with brown except towards base, a terminal series of black points from apex to vein 2.

Hab. Honduras (*Dyson*), 1 ♂; Jamaica (*Gosse*), 1 ♂; Cuba, Santiago (*Schaus*), 3 ♂, 2 ♀. *Exp.* 32–38 millim.

3861. Prodenia androgea.

Noctua androgea, Cram. Pap. Exot. iv. p. 42, pl. 310. f. D (1782); Druce, Biol. Centr.-Am., Het. i. p. 269.
Noctua marmorea, Sepp, Ins. Surinam, p. 109, pl. 51 (1848).

♀. Head and tegulæ red-brown; palpi ochreous with brown patches on the joints; lower part of frons ochreous; an ochreous bar between antennæ and another on vertex of head; tegulæ with black and ochreous medial line and ochreous tips; thorax ochreous mixed with rufous, the tegulæ with blackish scales near edges; fore tarsi whitish, the mid and hind tarsi ringed with white; abdomen ochreous tinged with rufous. Fore wing reddish brown suffused with fuscous and irrorated with black, with a large oblique

blue-white patch from apex to postmedial line, towards which it is somewhat diffused and tinged with violaceous, its upper edge angled above vein 6, the median nervure with pale yellow streak forking on bases of veins 3, 4; an oblique white striga from base of costa; subbasal line pale yellow, acutely angled outwards below costa, ending at subcostal nervure and with short yellow streaks beyond it on costal and subcostal nervures; a double very oblique yellow line across submedian interspace before the antemedial line, the inner line extending across cell; antemedial line double filled in with yellowish, excurved below costa and in submedian interspace where it is defined by yellowish on inner side, bent inwards to inner margin; claviform slightly defined by blackish, narrow and acute at extremity; orbicular a very oblique yellow bar with two fine brown lines on it, an oblique white streak from its lower edge to subterminal line at submedian fold and some yellowish above base of vein 2; a narrow yellowish and blackish bar across the cell before the reniform which is faintly defined by yellowish and black, its upper extremity produced to a point and with distinct yellowish mark on its outer edge; some ochreous and black irroration above orbicular and reniform; postmedial line indistinct, double, filled in with yellowish below vein 2, strongly bent outwards below costa, then oblique, waved, incurved below vein 2, some white points beyond it on costa; subterminal line yellowish, almost obsolete on the white patch, then slightly excurved and with black streaks before it in the interspaces, long above and below vein 3, angled inwards in submedian fold and defined by black on inner side, a series of yellow and black striæ beyond it except on the white patch; a terminal series of small black lunules slightly defined by yellowish on inner side; cilia red-brown intersected with yellowish and with fine yellowish line at base. Hind wing semihyaline white, the costa and termen towards apex slightly tinged with brown; a dark point on termen below apex and a fine terminal line from apex to vein 2; the underside with the costa irrorated with brown except towards base, a terminal series of black points from apex to vein 2.

Hab. Panama, Bugaba (*Champion*), 1 ♂, Godman-Salvin Coll.; St. Lucia (*Cowie*), 1 ♀; Trinidad (*Kaye*), 1 ♀; Guianas, Cayenne, Surinam; Brazil, Espiritu Santo (*Higgins*), 1 ♀. *Exp.* 52–54 millim.

3862. **Prodenia litura.**

Noctua litura, Fabr. Syst. Ent. p. 601 (1775).
Noctua histrionica, Fabr. Syst. Ent. p. 612 (1775).
Noctua elata, Fabr. Spec. Ins. ii. p. 220 (1781).
Hadena littoralis, Boisd. Faun. Ent. Mad. p. 91, pl. 13. f. 8 (1833); Moore, Lep. Ceyl. iii. p. 19, pl. 146. ff. 1 *a*, *b*; Hmpsn. Moths Ind. ii. p. 247; Staud. Cat. Lep. pal. p. 184.
Hadena retina, Frr. Neue Beitr. v. p. 161, pl. 478. ff. 2–3 (1846); Herr.-Schäff. Eur. Schmett., Noct. ff. 144–5.
Prodenia tasmanica, Guen. Noct. i. p. 163 (1852).
Prodenia ciligera, Guen. Noct. i. p. 164 (1852).
Prodenia testaceoides, Guen. Noct. i. p. 165 (1852).

Prodenia subterminalis, Wlk. ix. p. 196 (1856).
Prodenia glaucistriga, Wlk. ix. 197 (1856).
Prodenia declinata, Wlk. xi. 723 (1857).
Mamestra albisparsa, Wlk. Journ. Linn. Soc., Zool. vi. p. 186 (1862).
Prodenia evanescens, Butl. Mem. Nat. Ac. Sci. Wash., Rep. Eclipse Exp. p. 94 (1884).

♂. Head and thorax whitish mostly suffused with rufous; palpi with blackish marks at sides of joints; frons with brown bar above; tegulæ with some brown at base, slight medial line and brown tips; mid tibiæ streaked with black; abdomen ochreous tinged with rufous. Fore wing ochreous mostly suffused with brown, the medial area below the cell ochreous tinged with rufous, the terminal area rufous, the median nervure and bases of veins 2, 3, 4 streaked with white; subbasal line double and filled in with white towards costa, acutely angled outwards below costa and ending at vein 1; an oblique whitish line from subcostal nervure before antemedial line to vein 1, double below the cell; some silvery grey suffusion before antemedial line, which is double filled in with whitish, acutely angled outwards below costa, excurved below cell and retracted to inner margin; claviform elongate, slightly defined by black scales; orbicular narrow, oblique, white defined at sides by blackish and with faint rufous centre, a whitish bar on its outer edge and some whitish below it above base of vein 2; reniform whitish slightly defined by black and with some brown in centre, its upper extremity produced to a long acute point; traces of an oblique irregular medial line from lower extremity of reniform to inner margin; postmedial line double filled in with whitish, strongly bent outwards below costa, then oblique, minutely waved and slightly incurved at discal and submedian folds, some white points beyond it on costa; an oblique diffused violaceous grey fascia from apex to postmedial line, then defining its outer edge; a white subterminal line from the fascia to submedian fold, excurved at middle; a fine white line before termen slightly defined by black on outer side; a terminal series of slight black lunules; cilia brown intersected with white and with fine white line at base followed by a brown line. Hind wing white, the apex slightly tinged with brown; a fine brown terminal line from apex to vein 2; the underside with the costa slightly irrorated with brown except towards base, a terminal series of black points from apex to vein 2.

♀. Fore wing with the violaceous grey fascia from apex less strongly contrasting; the inner medial area not ochreous.

Ab. 1. *evanescens*. An albinistic form, very much paler; fore wing with all the markings obsolescent.—Caroline Is. and Marquesas.

Hab. Turkey, Frey Coll.; Crete; Syria (*Lederer*), 1 ♂, 3 ♀, Zeller Coll.; Madeira (*Wollaston, Meek*), 4 ♂, 2 ♀; Canaries, 2 ♂, Leech Coll.; Ascension I. (*Conry*), 1 ♀; St. Helena (*Wollaston*), 2 ♂, 3 ♀; 2 days from S. Trinidad (*Murray*), 1 ♀; Gold Coast (*Hales*), 1 ♂, 1 ♀, Kumasi (*Whiteside*), 1 ♂, 1 ♀; Nigeria, Old Calabar (*Sampson*), 1 ♂, Sapele (*Sampson*), 2 ♀, Onitsha, 1 ♀; Congo (*Curror*), 1 ♂; Egypt, Aboukir (*Graves*), 1 ♀; Soudan,

White Nile (*Dunn*), 1 ♀; Br. E. Africa, Athi-ya-Mawe (*Betton*), 1 ♂, Eb Urru (*Betton*), 1 ♂, Kikuyu (*Crawshay*), 1 ♀, Taveta (*Rogers*), 1 ♀; Uganda, Ruwenzori (*Legge & Wollaston*), 1 ♀; Mashonaland, Salisbury (*Marshall*), 1 ♀; Natal, Malvern (*Marshall*), 1 ♀, Maritzburg, 1 ♂, Durban (*Gooch, Leigh*), 1 ♂, 4 ♀; Rodriguez (*Gulliver*), 2 ♀; Mauritius (*Beke*), 1 ♂; Persian Gulf, Fao (*Cumming*), 1 ♂; Japan, Yokohama (*Pryer*), 1 ♀; Centr. China, Ichang (*Pratt*), 1 ♂, 1 ♀, Chang-yang (*Pratt*), 1 ♀; Formosa (*Dickson, Hobson, Seebohm*), 2 ♂, 2 ♀; Punjab, Kulu, Sultanpur (*G. Young*), 1 ♂, Kasauli (*Swinhoe*), 2 ♂, 2 ♀, Dharmsála (*Hocking*), 3 ♂, 3 ♀, Allahabad, 1 ♂, Manpuri, 1 ♂ (*Hearsay*), 1 ♀ type *subterminalis*, 1 ♂ type *glaucistriga*; Nepal (*Hodgson*), 1 ♂; Sikhim, 1 ♀; Bombay, 1 ♂, Bandra (*Jayaker*), 1 ♂, Ratnagiri (*Jayaker*), 1 ♀, Canara (*Ward*), 2 ♂; Madras, Nilgiris (*Hampson*), 3 ♂, Coimbatore (*Walhouse*), 1 ♂; Travancore, Permád (*Mrs. Imray*), 2 ♂; Ceylon (*Templeton*), 1 ♀; Burma, Moulmein (*Clerk*), 1 ♂, 1 ♀ type *destinata*, Mandalay (*Bingham*), 1 ♂, 1 ♀; Singapore (*Ridley*), 5 ♂, 2 ♀; Borneo, Sarawak, type *albisparsa* in Mus. Oxon., Mt. Marapok, 1 ♀; Java (*Horsfield*), 6 ♂, 3 ♀ type *ciligera*; Christmas I. (*Andrewes*), 2 ♀; Cocos Keeling I. (*Wood-Jones*), 1 ♂, 1 ♀; New Guinea, Mt. Kebea (*Pratt*), 1 ♂, 1 ♀; Queensland, Moreton Bay (*Diggles*), 2 ♂, Brisbane (*Turner*), 1 ♂; N. S. Wales (*Daniel, Raynor*), 1 ♂, 1 ♀; Fiji (*Mathew*), 1 ♂, 1 ♀; Gilbert Is. (*Woodford*), 2 ♀; Caroline Is. (*Holden*), 4 ♀ type *evanescens*; Marshall Is. (*Mathew*), 2 ♂, 3 ♀; Navigators Is., 1 ♂; Tahiti (*Mathew*), 1 ♂; Society Is. (*J. J. Walker*), 3 ♀; Marquesas (*J. J. Walker*), 4 ♂; Sandwich Is. (*Perkins*), 1 ♀. *Exp.* 30–44 millim.

Larva. Moore, Lep. Ceyl. iii. pl. 146. f. 1 *b*.

Pale violet-brown with subdorsal series of narrow yellow spots with black lunules above them; lateral series of purplish black spots with white dot in centre; a sublateral white line. Food-plant: *Lantana*.

3863. **Prodenia latifascia.** (Plate CXXVIII. fig. 18.)

Prodenia latifascia, Wlk. ix. 195 (1856).
Prodenia variolosa, Wlk. xi. 722 (1857); Druce, Biol. Centr.-Am., Het. i. p. 269.
Prodenia cosmioides, Wlk. xv. 1678 (1858).
Prodenia commelinæ, Druce, Biol. Centr.-Am., Het. i. p. 268 (part.), nec Smith & Abbot.

♂. Head and thorax ochreous white mixed with rufous; palpi with blackish marks at sides of 2nd and 3rd joints; tegulæ with slight brown medial line and some rufous at tips; tibiæ with some black points, the tarsi banded with black; abdomen ochreous suffused with rufous. Fore wing ochreous suffused with rufous, the basal area with some whitish suffusion, the antemedial area with some greyish fuscous suffusion, the area beyond postmedial line bluish white with red-brown patch on costa before subterminal line and

slight brown suffusion at middle; subbasal line represented by double dark striæ from costa; an indistinct oblique pale line from subcostal nervure at antemedial line to vein 1; antemedial line indistinctly double filled in with whitish, minutely waved, oblique below submedian fold; claviform hardly traceable; orbicular represented by a quadrate whitish patch with oblique pale rufous bar on it at middle and fine oblique line near outer edge; reniform defined by a whitish and blackish bar on inner edge, otherwise faintly defined by rufous, its upper extremity strongly produced to a point, filled in with pale yellow; an indistinct oblique waved brown line from vein 5 beyond the cell to inner margin; postmedial line double filled in with whitish, strongly bent outwards and obsolescent below costa, then oblique, minutely waved and incurved at discal fold, some white points beyond it on costa; subterminal line indistinct, white, from veins 7 to 2, slightly excurved at middle; a brown point on costa just before apex; a terminal series of small triangular brown spots and fine waved black terminal line; cilia red-brown intersected with pale yellow and with fine yellowish line at base. Hind wing semihyaline white; a terminal brown line from apex to vein 2; the underside with the costa slightly irrorated with black except at base, a terminal series of black points from apex to vein 2.

♀. Fore wing with the medial area brown, tinged with ochreous at inner margin only, the median nervure and veins arising from it streaked with white, the orbicular and reniform much more distinctly defined, the postmedial area rather darker and the terminal area rufous except at apex and tornus.

Hab. Mexico, Jalapa (*Trujillo*), 5 ♂, 2 ♀, Cordova (*Rumeli*), 1 ♂, Presidio (*Forrer*), 1 ♂, 1 ♀, Mexico City (*Hoege*), 1 ♂, Coatepec (*Brooks*), 1 ♂, Durango (*Becker*), 1 ♂, 1 ♀; Guatemala (*Rodriguez*), 1 ♀, Vera Paz (*Champion*), 2 ♂; Costa Rica, Candelaria Mts. (*Underwood*), 1 ♂, Irazu (*Rogers*), 1 ♀; Panama, Bugaba (*Champion*), 1 ♀, Godman-Salvin Coll.; Jamaica (*Kaye*), 1 ♂; Cuba, Santiago (*Schaus*), 1 ♂, Matanzas (*Schaus*), 1 ♀; Haiti (*Tweedie*), 3 ♂ type *variolosa*; St. Lucia (*Cowie*), 1 ♀; Br. Guiana, Demerara (*Jenman*), 1 ♂; Brazil, Amazons, Para, 1 ♂; Paraguay, Sapucay (*Foster*), 4 ♂, 2 ♀; Argentina (*Thomas*), 1 ♂, Goya (*Perrins*), 3 ♂, 1 ♀, Riojo (*Giacomelli*), 1 ♂. *Exp.* 40–50 millim.

3864. **Prodenia ornithogalli.** (Plate CXXVIII. fig. 19.)

Prodenia ornithogalli, Guen. Noct. i. p. 163 (1852), ♀; Smith, Cat. Noct. N. Am. p. 169.
Prodenia eudiopta, Guen. Noct. i. p. 164 (1852), ♂; Smith, Cat. Noct. N. Am. p. 170.
Prodenia flavimedia, Harv. Bull. Buff. Soc. Nat. Sci. ii. p. 274 (1874).
Prodenia lineatella, Harv. Bull. Buff. Soc. Nat. Sci. ii. p. 275 (1874).
Prodenia commelinæ, Riley, 3rd Rept. Ins. Mo. p. 113, f. 48*b* (1871); Druce, Biol. Centr.-Am., Het. i. p. 268 (part.), nec Smith & Abbot.

♂. Head and thorax ochreous white mixed with rufous; palpi with brown patch at side of 2nd joint, the 3rd joint black at base;

tegulæ with rufous medial line and rufous tips; patagia with oblique rufous medial bar and rufous tips; tibiæ with slight blackish marks; abdomen ochreous white suffused with rufous. Fore wing brown mixed with some ochreous and with slight dark irroration, the medial area below the cell ochreous tinged with rufous, the median nervure and veins rising from it streaked with white on medial area; subbasal line represented by an oblique white striga from costa defined at sides by black striæ and an oblique white line defined at sides by black from subcostal nervure before antemedial line to vein 1; some leaden grey suffusion before the antemedial line, which is double filled in with whitish, oblique waved to median nervure, then excurved and retracted to inner margin; claviform moderate, incompletely defined by black; orbicular oblique, white defined at sides with black, with pale rufous line in centre and whitish bar on outer edge, slightly angled inwards on median nervure; reniform with brown centre and whitish annulus defined by black, indistinctly below, its upper extremity moderately produced to a point; an oblique waved line from vein 5 beyond the cell to inner margin, angled outwards on vein 1; postmedial line double, filled in with whitish at costa and towards inner margin, strongly bent outwards below costa, incurved at discal fold, then oblique, waved and bent outwards to inner margin, some white points beyond it on costa; a broad diffused oblique blue-white fascia from apex to middle of postmedial line and large patch at tornus; subterminal line white, oblique towards costa, angled outwards at vein 7 and excurved at middle, a series of short black streaks before it, longer at middle; a curved yellowish-white line before termen defined by black striæ on outer side; a terminal series of small black lunules with some bluish-white suffusion before them; cilia red-brown intersected with white and with fine white line at base. Hind wing semihyaline white, the veins tinged with brown on terminal half; the termen brown from apex to vein 2; the underside with the costa slightly irrorated with brown, a terminal series of black points from apex to vein 2.

Ab. 1. *flavimedia*. Fore wing with the inner medial area more prominently ochreous.

♀. Fore wing without ochreous on inner half of medial area, the median nervure and veins arising from it more distinctly streaked with white, the orbicular more distinctly defined, the bluish-white fascia from apex narrower and less prominent, less bluish white at tornus.

Hab. U.S.A., Massachusetts, New York (*Packard*, *Riley*), 3 ♂, 5 ♀, Long I. (*Hulst*), 1 ♂, Pennsylvania, 1 ♂, New Jersey, Lakehurst, 1 ♂, Distr. of Columbia, Kansas (*Snow*), 1 ♀, Nebraska, Missouri, Texas, Dallas (*Boll*), 2 ♂, 4 ♀, types *flavimedia* and *lineatella*, Round Mt., 1 ♂, California; Mexico, Jalapa (*Trujillo*), 2 ♀; Costa Rica, Candalaria Mts. (*Underwood*), 1 ♂, Godman-Salvin Coll. *Exp.* 40–46 millim.

Larva. Head reddish, black in front, the V-mark over clypeus contrasted. Body robust, joints 5 and 12 enlarged; brown, reddish on the dorsal line and below the spiracles, finely longitudinally strigose; subdorsal line pale yellow with a row of black wedge-shaped marks above it; lateral area behind joint 5 as pale as subdorsal line, below dark; a brown spot on joint 5; substigmatal band obsolete.—H. G. D.

3865. **Prodenia præfica.** (Plate CXXVIII. fig. 20.)

Prodenia præfica, Grote, Can. Ent. vii. p. 44 (1875); Smith, Cat. Noct. N. Am. p. 170.

Head and thorax ochreous white mixed with pale red-brown; palpi with brown patches at sides of 1st and 2nd joints; patagia with some dark scales near upper edge; tibiæ with some dark brown points; tarsi banded with blackish; abdomen ochreous white tinged with reddish brown. Fore wing ochreous white suffused in parts with brown and grey and irrorated with black, the veins with slight pale streaks; subbasal line represented by slight double black striæ from costa filled in with whitish; an oblique irregular whitish line from subcostal nervure before the antemedial line to vein 1; antemedial line indistinctly double filled in with whitish, angled outwards below costa, then oblique, waved, retracted to inner margin; the medial area with the median nervure and veins arising from it streaked with white; orbicular oblique, white defined at sides by black, with brown line in middle and without bar on its outer edge, some whitish below it above base of vein 1; reniform incompletely defined by blackish with black and white bar on inner edge and whitish mark on outer, its upper extremity produced to an indistinctly defined point; an indistinct oblique waved black line from vein 5 beyond the cell to inner margin; postmedial line double filled in with whitish, strongly bent outwards below costa, then oblique, sinuous, incurved at discal and submedian folds and bent outwards to inner margin, some white points beyond it on costa and slight oblique diffused violaceous white fascia from apex; subterminal line white, excurved below vein 7 and at middle and angled inwards in submedian fold, a series of short black streaks before it in the interspaces, a fine curved white line beyond it bent inwards to costa; a terminal series of small black lunules; cilia brown intersected with white and with white line at base. Hind wing white tinged with brown, especially on the veins and terminal area; a slight discoidal lunule; a terminal series of brown striæ except towards tornus; cilia white; the underside with the costal area irrorated with brown, a blackish discoidal lunule and terminal series of black points from apex to vein 2.

Hab. U.S.A., California, Mendocino, 2 ♂, 1 ♀ type, Sauzalito, 1 ♀. *Exp.* 40–46 millim.

3866. **Prodenia marima.** (Plate CXXVIII. fig. 21.)

Prodenia marima, Schaus, Trans. Am. Ent. Soc. xxx. p. 150 (1904).

♂. Head and thorax olive and reddish brown mixed with ochreous white; palpi with some fuscous on 2nd joint behind and near extremity; tegulæ with dark lines near base, at middle and near tips; patagia with some black scales near edges; tibiæ and tarsi with blackish marks; abdomen ochreous white tinged with brown, the crests and anal tuft rufous. Fore wing brown mixed with greyish and whitish and slightly irrorated with blackish, the veins with slight pale streaks, the medial area with the median nervure and veins rising from it prominently streaked with white; subbasal line represented by an oblique whitish striga from costa defined on each side by slight black striæ, an oblique whitish line defined by blackish on inner side from subcostal nervure before antemedial line to vein 1 and a black line angled outwards above inner margin; antemedial line double filled in with whitish, excurved from costa to median nervure and in submedian interspace, then retracted to the subbasal line at inner margin; claviform elongate, defined by black; orbicular oblique, narrow, yellowish white defined by black, with olive-brown line in centre, whitish bar on outer edge and some whitish below it above base of vein 2; reniform with ochreous-white annulus defined by black, its upper extremity produced to a rather long point; an oblique waved line from beyond lower angle of cell to inner margin; postmedial line double filled in with whitish, strongly bent outwards below costa, then oblique, waved, incurved at discal and submedian folds and bent outwards to inner margin, some white points beyond it on costa; subterminal line white, angled outwards above vein 7 and excurved at middle, with black streaks before it in the interspaces rather longer at middle, a fine white line beyond it excurved below costa and slightly defined by black on outer side; a fine waved black terminal line; cilia fuscous and whitish intersected with white and with fine white line at base followed by a dark line. Hind wing semihyaline white; the underside with the costal area tinged with ochreous and slightly irrorated with brown towards apex.

Hab. Brazil, Castro Paraña (*D. Jones*), 1 ♂. *Exp.* 34 millim.

Genus **SPODOPTERA.**

	Type.
Spodoptera, Guen. Noct. i. p. 153 (1852)	*mauritia.*
Eulaphygma, Butl. Trans. Ent. Soc. 1890, p. 668	*abyssinia.*

Proboscis fully developed; palpi upturned, the 2nd joint moderately scaled and reaching about to middle of frons, the 3rd short; frons smooth; eyes large, round; antennæ of male typically ciliated; thorax clothed chiefly with scales, the prothorax without distinct crest, the metathorax with spreading crest; fore tibiæ broadly fringed with hair on outer side, the mid and hind tibiæ moderately fringed; abdomen with dorsal crest at base only. Fore wing with the apex rounded, the termen evenly curved and slightly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing

with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male bipectinate with short branches, the apex serrate.

A. Fore wing prominently variegated with black ..... *umbraculata.*
B. Fore wing not variegated with black ..... *pecten.*

3867. Spodoptera umbraculata. (Plate CXXVIII. fig. 22.)

Eumichtis umbraculata, Wlk. xv. 1717 (1858).
Agrotis enunciatus, Lucas, Pr. R. Soc. Queensl. viii. p. 85 (1892).
Hadena andrias, Meyr. Trans. Ent. Soc. 1902, p. 27.

♂. Head dark brown; palpi with blackish patch on 2nd joint; tegulæ brown at base with black medial band and grey tips; thorax brown and grey; abdomen grey. Fore wing grey-white suffused in parts with reddish brown and variegated with black; subbasal line blackish, waved, from costa to submedian fold; a diffused brown line, angled outwards below costa and in cell and more strongly inwards on vein 1 before the antemedial line, which is oblique, waved, double, the outer line stronger, filled in with grey; claviform obsolete; orbicular and reniform small, slightly defined by blackish, the former ochreous, produced at lower extremity, the latter with black centre and ochreous annulus; postmedial line somewhat dentate, defined by whitish on outer side, double at costa, bent outwards below costa, angled inwards in discal fold, incurved below vein 4; subterminal line whitish, slightly angled outwards at vein 7 and excurved at middle, with small somewhat dentate brown marks on its inner side and large patches at costa and middle, the area beyond it brown; a terminal series of small black lunules; cilia dark brown intersected with white. Hind wing white, the veins brownish; the terminal area suffused with fuscous broadly at apex, narrowing to a point above tornus; the underside with the costal area irrorated with fuscous, a terminal series of blackish points.

♀. Fore wing more uniform greyish without the patches of dark suffusion.

Hab. Queensland, Brisbane (*Lucas*), type † ♂ *andrias* in Coll. Meyrick (*Turner*), 2 ♂, 1 ♀, Goodna (*Turner*), 1 ♀, Moreton Bay (*Diggles*), 1 ♂ type. *Exp.* 34–40 millim.

3868. Spodoptera pecten.

Spodoptera pecten, Guen. Noct. i. p. 155 (1852); Staud. Cat. Lep. pal. p. 195 (part.).
Spodoptera erica, Butl. P. Z. S. 1880, p. 675.
Spælotis uniformis, Swinh. Trans. Ent. Soc. 1890, p. 226.
Caradrina pectinata, Hmpsn. Moths Ind. ii. p. 264 (1894).

♂. Head and thorax ochreous suffused with rufous and slightly mixed with fuscous; palpi with black spot on 1st joint and the

2nd joint black at sides except at tips; frons with slight lateral black bars; antennæ blackish; tegulæ with medial blackish line; pectus and legs whitish, the tarsi blackish with pale rings; abdomen whitish slightly tinged with rufous. Fore wing ochreous suffused with rufous and slightly irrorated with black; antemedial line very indistinct, double filled in with whitish, oblique, waved; orbicular defined by black at sides, oblique quadrate, conjoined at lower extremity to the reniform, which has a blackish centre and pale annulus with black mark between its upper part and orbicular and slightly defined by fuscous on outer side; traces of an oblique line from lower angle of cell to inner margin; postmedial line very indistinct, double, filled in with whitish at costa and below vein 2, bent outwards below costa, then dentate, angled inwards at discal fold and incurved below vein 4, some whitish points beyond it on costa; subterminal line whitish slightly defined by fuscous on inner side, more prominently at middle and with black streaks before it

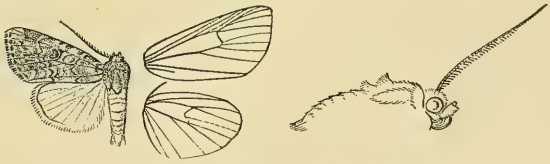


Fig. 63.—*Spodoptera pecten*, ♂. ½.

in the interspaces between veins 7 and 2, angled outwards at vein 7, excurved and minutely waved at middle and angled inwards in submedian fold; the terminal area tinged with fuscous; a terminal series of double rather triangular black spots; cilia whitish tinged with rufous and mixed with fuscous. Hind wing white, the veins on terminal area tinged with brown, the costa towards apex and termen to vein 2 with fuscous; the underside with the costal area irrorated with fuscous, a terminal series of black points from apex to vein 2.

♀. Fore wing more uniform brown, with the lines less prominent and not filled in with whitish, the reniform filled in with fuscous instead of black, the subterminal line slightly defined by fuscous.

Hab. Corea, Gensan (*Leech*), 1 ♀; Loo-choo Is. (*Pryer*), 1 ♀; Formosa (*Hobson*), 2 ♂, 2 ♀ type *erica*; Sikhim (*Dudgeon*), 2 ♂, 1 ♀; Assam, Nagas, type † *pectinata* in Coll. Rothschild; Bengal, Calcutta, 1 ♂; Burma, Bhamo, 1 ♀ type *uniformis*; Perak, Goping (*Kunstler*), 1 ♂; Singapore (*Ridley*), 8 ♂, 10 ♀; Borneo, Sarawak (*Wallace, Bartlett*), 2 ♂, Sandakan (*Pryer*), 1 ♀; Labuan (*Everett*), 2 ♂; Java (*Horsfield*), 5 ♂, 1 ♀ type. *Exp.* 28–34 millim.

Larva on "Bukoot."

Sect. II. (*Eulaphygma*). Antennæ of male minutely serrate and fasciculate.

3869. Spodoptera abyssinia.

Spodoptera abyssinia, Guen. Noct. i. p. 154 (1852).
Spodoptera cilium, Guen. Noct. i. p. 156 (1852); Hmpsn. Moths Ind. ii. p. 259.
Caradrina latebrosa, Led. Verh. zool.-bot. Ges. Wien. 1855, p. 205, pl. 2. f. 11; Staud. Cat. Lep. pal. p. 195.
Caradrina orbicularis, Wlk. x. 294 (1856); Hmpsn. Nat. Hist. Sokotra, p. 323, pl. xx. f. 26.
Caradrina præterita, Wlk. x. 294 (1856).
Caradrina insignata, Wlk. x. 295 (1856).
Laphygma procedens, Wlk. xi. 721 (1857).
Agrotis infixa, Wlk. Journ. Linn. Soc., Zool. vi. p. 186 (1862).
Laphygma obliterans, Wlk. Trans. Ent. Soc. (3) i. p. 87 (1862).
Spodoptera insulsa, Wlk. xxxii. 648 (1865).
Laphygma imperviata, Wlk. xxxii. 651 (1865).
Laphygma retrahens, Wlk. Entom. v. p. 126 (1870).

♂. Head and thorax ochreous suffused with red-brown; palpi with black bands on 2nd and 3rd joints near extremity; frons with lateral black bars; tegulæ with black medial line; tarsi black ringed with white; abdomen whitish dorsally suffused with brown. Fore wing greyish suffused with brown; subbasal line represented by double black striæ from costa and cell; antemedial line double filled in with whitish, the inner line indistinct, oblique, waved; orbicular whitish defined by black and with slight brown centre, oblique elliptical, open below and connected by a streak above median nervure with the reniform which is defined by black on

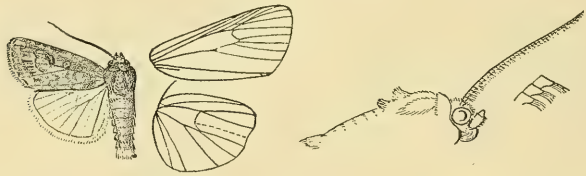


Fig. 64.—*Spodoptera abyssinia*, ♂. ½.

inner side, its centre defined by diffused black; an oblique dark striga from costa to reniform and waved line from lower angle of cell to inner margin, angled inwards in submedian fold; postmedial line double filled in with whitish, the outer line indistinct, bent outwards below costa, then minutely dentate, incurved below vein 4, some pale points with fuscous between them beyond it on costa; subterminal line whitish defined on inner side by fuscous suffusion except between veins 7 and 5, and with slight dark streaks in the interspaces before it at middle, angled outwards at vein 7, excurved and minutely waved at middle and angled inwards in submedian fold; the terminal area tinged with fuscous; a terminal series of small, rather triangular black spots; cilia whitish with a fuscous line near base and some fuscous at tips. Hind wing pure semi-

hyaline white, the underside with the costa slightly irrorated with brown, a terminal series of black points from apex to vein 2.

♀. Fore wing with the orbicular completely defined by black, the reniform with fuscous centre and whitish annulus defined by black points on outer side. Hind wing with dark terminal line from apex to submedian fold and dark line through the cilia to vein 2.

Hab. Sierra Leone (*Morgan*), 1 ♂ type *procedens*; Lagos, Ebute Meta (*Boag*), 1 ♀; Nigeria, Old Calabar (*Crompton, Sampson*), 5 ♂, Sapele (*Sampson*), 1 ♂; Egypt; Arabia, Mt. Sinai; Abyssinia; Sokotra, Adho Dimellus (*Grant*), 2 ♂, 1 ♀; Br. E. Africa, Sabaki R. (*Gregory*), 1 ♀, El Urru (*Betton*), 1 ♂; Mashonaland, Salisbury (*Marshall*), 2 ♂; Natal, Maritzburg, 1 ♀, Durban (*Gooch, Bell-Marley, Leigh*), 2 ♂, 3 ♀; Cape Colony, Grahamstown (*Miss Barrett*), 1 ♂, Annshaw (*Miss Barrett*), 1 ♂, Knysna (*Trimen*), 4 ♂, 1 ♀ (*Sir A. Smith*), 1 ♂, 4 ♀, types *orbicularis, præterita*, and *insignata*; Mauritius, Curepipe (*Tulloch*), 1 ♀; Rodriguez (*Gulliver*), 1 ♂, 1 ♀; Seychelles, Mahé (*Meade-Waldo*), 2 ♀; Asia Minor, Taurus Mts.; Syria; Palestine; Persian Gulf, Fao (*Cumming*), 1 ♂, 1 ♀; Punjab, Sultanpur (*G. Young*), 1 ♂, 1 ♀; Sikhim, 1 ♂; Bombay, Bandra (*Jayaker*), 1 ♂; Madras, Gooty (*Campbell*), 2 ♂, Nilgiris (*Cardew*), 1 ♂; Ceylon, Kandy (*Green*), 1 ♂, 1 ♀; Philippines, Luzon, San Fernando, 1 ♀; Borneo; Java (*Horsfield*), 3 ♂, 2 ♀, types *cilium* and *insulsa*. *Exp.* 28–32 millim.

Larva. Ochreous with numerous pale points defined by pale brown; dorsal line orange; subdorsal line represented by a series of orange marks defined by irregular black lunules above; lateral line represented by orange marks, the stigmata black with brown patches above them; head and thoracic plate red-brown.—Natal (*Leigh*).

Sect. III. Antennæ of male fasciculate.

3870. Spodoptera compta.

Laphygma compta, Wlk. Char. Undescr. Het. p. 30 (1869).

Head and thorax ochreous suffused with bright rufous, the vertex of head and outer edge of patagia with some fuscous scales; palpi

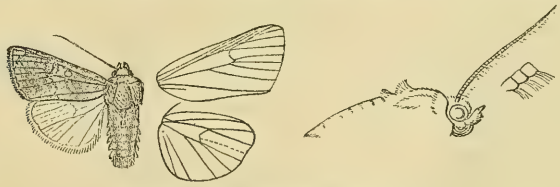


Fig. 65.—*Spodoptera compta*, ♂. ½.

with the 1st and 2nd joints tinged with fuscous at sides; tarsi suffused with fuscous and with pale rings; abdomen ochreous

tinged with rufous. Fore wing ochreous suffused with bright rufous and slightly irrorated with brown, the terminal area suffused with fuscous and with slight pale streaks on the veins, some whitish at base of inner margin; faint traces of a pale curved waved antemedial line; orbicular represented by a faint minute dark spot; reniform dark, ill-defined; postmedial line indistinct, dark, slightly defined by whitish on outer side, bent outwards below costa and incurved below vein 4; subterminal line whitish defined by fuscous suffusion on inner side, somewhat excurved at middle; a slight dark terminal line; cilia rufous tinged with fuscous and with a fine pale line at base. Hind wing pure semihyaline white; the underside with the costal area slightly irrorated with brown.

Hab. Peru, 2 ♂, 1 ♀ type. *Exp.* 36 millim.

Sect. IV. (*Spodoptera*). Antennæ of male ciliated; fore tibiæ with very large tufts of hair and scales from outer side.

A. Hind wing semihyaline white .... *mauritia.*
B. Hind wing cupreous brown ..... *postfusca.*

3871. Spodoptera mauritia.

Hadena mauritia, Boisd. Faun. Ent. Madag., Lép. p. 92, pl. 13. f. 9 (1833); Hmpsn. Moths Ind. ii. p. 248.
Spodoptera acronyctoides, Guen. Noct. i. p. 154 (1852).
Spodoptera nubes, Guen. Noct. i. p. 155 (1852).
Spodoptera filium, Guen. Noct. i. p. 155 (1852).
Prodenia infecta, Wlk. ix. 196 (1856); Butl. Ill. Het. B. M. vi. p. 33, pl. 109. f. 8.
Prodenia insignata, Wlk. ix. 197 (1856).
Caradrina triturata, Wlk. x. 295 (1856).
Agrotis transducta, Wlk. x. 344 (1856).
Prodenia permunda, Wlk. xi. 723 (1857).
Laphygma gratiosa, Wlk. xxxii. 651 (1865).
Laphygma squalida, Wlk. xxxii. 652 (1865).
Prodenia venustula, Wlk. xxxii. 654 (1865).
Celæna bisignata, Wlk. xxxii. 679 (1865).
Agrotis aliena, Wlk. xxxii. 694 (1865).
Agrotis submarginalis, Wlk. xxxii. 699 (1865).
Agrotis bisignata, Wlk. xxxii. 702 (1865).
Hadena obliqua, Wlk. xxxiii. 736 (1865).

♂. Head and thorax red-brown mixed with some greyish and black; palpi with black band on 2nd joint near extremity; frons with slight lateral black bars; antennæ blackish; tips of patagia and metathorax with black scales; tarsi black ringed with white; abdomen fuscous grey, the basal crest and ventral surface rufous. Fore wing greyish suffused with rufous and in parts with fuscous and irrorated with black, the veins greyish; subbasal line double, black, irregularly waved, the outer line angled outwards below costa, from costa to vein 1; an oblique waved black line from subcostal nervure to inner margin before the antemedial line, which is indistinctly double, oblique, waved and with double black spots at costa; claviform represented by an oblique black striga at its extremity; orbicular whitish defined by black except below, its

centre tinged with rufous, round, an oblique whitish bar beyond it before the reniform which has a whitish annulus incompletely defined by black and diffused black spot in centre, the area beyond it between veins 5 and 3 suffused with fuscous to subterminal line; an indistinct oblique waved line from lower angle of cell to inner margin; postmedial line double, the outer line indistinct, bent outwards below costa, then waved, incurved at discal fold and oblique below vein 4, some pale points beyond it on costa; subterminal line white with slight black streaks before it in the interspaces, angled outwards at veins 7, 6, 4, 3, and incurved at discal

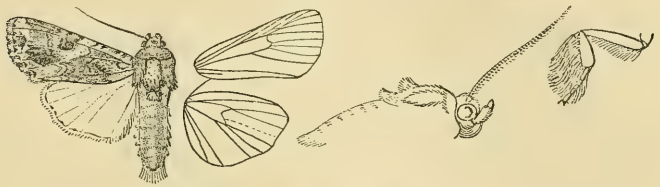


Fig. 66.—*Spodoptera mauritia*, ♂. ½.

and submedian folds, a dark patch beyond it at discal fold and the apex suffused with white; a terminal series of small rather triangular black spots slightly defined by whitish on inner side; cilia pale rufous with blackish line near base and chequered with blackish at tips. Hind wing white, the veins, costal and inner areas tinged with brown; a blackish terminal line; cilia tinged with brown at apex; the underside with the costal area irrorated with fuscous, a terminal series of black points from apex to vein 2.

♀. Fore wing paler and more uniform brown without the oblique whitish bar beyond the orbicular.

Ab. 1. Fore wing of male like the female.

Hab. Sierra Leone (*Morgan, Foxcroft*), 2 ♂, 2 ♀, types *bisignata*, *gratiosa*, and *triturata*; Lagos, Ebute Meta (*Boag*), 1 ♀; N. Nigeria, Egga (*Dudgeon*), 1 ♂; S. Nigeria, Old Calabar (*Crompton*), 1 ♂, 1 ♀; Red Sea (*Fletcher*), 1 ♂; Br. E. Africa, Nairowa (*Betton*), 1 ♂, Kikuyu (*Crawshay*), 1 ♀; Mashonaland, Salisbury (*Marshall*), 2 ♂, 1 ♀; Natal, Durban (*Bell-Marley, Leigh*), 2 ♂; Madagascar, Betsileo (*Cowan*), 2 ♂, 1 ♀; Mauritius, Curepipe (*Beke, Tulloch*), 1 ♂, 2 ♀ type *aliena*; C. China, Shanghai, 1 ♂ type *obliqua*; Punjab, Simla (*Swinhoe, Harford*), 4 ♀, Kasauli (*Swinhoe*), 2 ♀, Dharmsála (*Hocking*), 4 ♂, 4 ♀, Jubbulpur (*Butler*), 1 ♀, Allahabad, 1 ♀, Manpuri, 1 ♂; N. India (*James*), 2 ♂, 1 ♀, types *squalida*, *insignata*, and *infecta*; Bengal, Calcutta, 1 ♀; Sind, Kutch, 1 ♀; Bombay, 2 ♀, Ratnagiri (*Jayaker*), 1 ♂, 1 ♀, Khandalla (*Swinhoe*), 1 ♂; Madras, Coimbatore (*Walhouse*), 1 ♂ type *venustula*; Ceylon (*Nietner*), 2 ♂, Pundaloya (*Green*), 2 ♀, Trincomali (*Yerbury*), 1 ♂; Burma, Moulmein (*Clerk*), 2 ♀, Rangoon (*Scott*), 1 ♀, Thayetmyo (*Watson*), 1 ♀, Tenasserim, Donat Hills (*de Nicéville*), 1 ♂; Andamans, 1 ♂; Perak, Goping (*Künstler*), 1 ♀; Siam (*Bowring*), 1 ♂ type *permunda*; Singapore

(*Ridley*), 6 ♂; Borneo, Sarawak (*Wallace*), 1 ♂, Kuching (*Shelford*), 1 ♀; Philippines, Luzon, San Fernando (*McGregor*), 2 ♂, 1 ♀; Java (*Horsfield*), 1 ♂, 2 ♀, types *nubes*, *filium*, and *submarginalis*; Cocos-Keeling I. (*Wood-Jones*), 1 ♀; New Guinea, Sogeri, 1 ♂, Port Moresby, 1 ♂; N. Australia, Port Darwin (*J. J. Walker*), 2 ♂, 3 ♀; Queensland, Brisbane (*Turner*), 1 ♂, 1 ♀, Moreton Bay (*Diggles*), 1 ♀ type *bisignata*; Society Is., Tahiti; Marquesas (*J. J. Walker*), 2 ♂, 5 ♀; Hawaii, Kona (*Perkins*), 1 ♀. *Exp.* 32–44 millim.

Larva. Dyar, Can. Ent. 1894, p. 65, & 1900, p. 157.

Dark brown with numerous whitish striæ; dorsal fascia white-edged; subdorsal and lateral fasciæ white; ventral surface pale greenish; head red-brown. Injurious to rice in the Punjab.

3872. Spodoptera postfusca.

Spodoptera postfusca, Hmpsn. Ill. Het. B. M. ix. p. 95, pl. 162. f. 8 (1893); id. Moths Ind. ii. p. 263.

♀. Head and thorax red-brown, the scales tipped with white; tarsi dark brown ringed with white; abdomen brown mixed with whitish. Fore wing purplish grey thickly irrorated with dark brown and with some brown suffusion before inner half of postmedial line; subbasal line represented by a black striga from costa and black and white spot below cell; antemedial line double, minutely waved and slightly curved; claviform defined by blackish at extremity and extending to median nervure; orbicular and reniform very indistinctly defined and with a prominent black patch between them in cell, the former round; a dark striga from costa to reniform and indistinct oblique line from lower angle of cell to inner margin; a diffused blackish fascia from reniform to subterminal line above vein 5; postmedial line double, bent outwards below costa, then minutely dentate, oblique below vein 4, some white points beyond it on costa; subterminal line whitish, waved, interrupted, defined by dark brown on inner side and with dentate dark brown marks before it on costal half, excurved below vein 7 and at middle; a slight waved terminal line with small black spots in the interspaces. Hind wing dark red-brown, the cilia chequered brown and whitish; the underside rather paler, with faint discoidal spot and curved postmedial line with some whitish suffusion before it on disk.

Hab. Ceylon (*Green*), 1 ♀ type. *Exp.* 30 millim.

Genus LAPHYGMA.

Type.

Laphygma, Guen. Noct. i. p. 156 (1852) ..... *exigua*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and moderately scaled, the 3rd short; frons smooth; eyes large, round; antennæ of male minutely serrate or ciliated; thorax clothed

almost entirely with scales, the prothorax without crest, the metathorax with spreading crest; tibiæ moderately fringed with hair; abdomen with dorsal crest at base only. Fore wing with the apex rectangular, the termen evenly curved and hardly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male minutely serrate.

A. Fore wing black-brown suffused with leaden grey..... *leucophlebia.*
B. Fore wing ochreous brown ..... *apertura.*

3873. Laphygma leucophlebia. (Plate CXXVIII. fig. 23.)

Prodenia leucophlebia, Hmpsn. Ann. S. Afr. Mus. ii. p. 288 (1902).

Head and thorax dark red-brown mixed with some grey and black, the head darker, the antennæ whitish; tarsi ringed with white; abdomen whitish, the basal crest black, the anal tuft tinged with rufous, the ventral surface blackish. Fore wing black-brown suffused with leaden grey and irrorated with black, the base of inner margin and terminal area paler, the medial area with the median nervure and bases of veins 4, 3 streaked with white; subbasal line represented by double black striæ from costa and a blackish patch below cell; antemedial line double filled in with greyish, oblique, minutely waved, bent inwards to inner margin; orbicular and reniform defined by black, the former whitish with pale red-brown centre, narrow, oblique, produced at lower extremity, the latter with fuscous centre and whitish annulus, with straight inner edge and constricted at middle; an indistinct oblique waved line from lower angle of cell to inner margin; postmedial line double filled in with greyish, bent outwards below costa, then oblique, minutely waved, slightly excurved at median nervules, some white points beyond it on costa; subterminal line whitish, minutely waved, indistinct towards costa, angled outwards at vein 7, very slightly excurved at middle and angled inwards in submedian fold, with series of diffused somewhat wedge-shaped black marks before it in the interspaces, a series of fine white striæ beyond it defined on outer side by slight black striæ confluent with the terminal series of small somewhat triangular black spots; cilia black-brown intersected with white and with some white at tips. Hind wing pure white, the apex slightly tinged with brown; the underside with the costal area tinged with brown and with a terminal series of minute dark points from apex to vein 2.

Hab. Transvaal, White R. (*Cooke*), 1 ♂; Natal, Karkloof (*Marshall*), 2 ♂, 1 ♀ type; Queensland, Brisbane (*Turner*), 1 ♂.
Exp. 34–36 millim.

3874. Laphygma apertura.

Prodenia apertura, Wlk. xxxii. 654 (1865).
Prodenia synstictis, Hmpsn. Moths Ind. iv. p. 511 (1896).

Head and thorax ochreous mixed with reddish brown; palpi brown except at tips; vertex of head with some blackish scales; tegulæ with slight dark medial line; tarsi fuscous ringed with whitish; abdomen ochreous white, the basal crest blackish. Fore wing ochreous suffused with dark brown and greyish and irrorated with black, the medial area with the median nervure, vein 2 and the bases of veins 3, 4 streaked with ochreous white; subbasal line represented by double black striæ from costa and cell, with an oblique blackish mark beyond it across submedian interspace; antemedial line indistinctly double filled in with ochreous, angled outwards below costa, excurved in submedian interspace and retracted to inner margin; claviform moderate, blackish; orbicular and reniform ochreous defined by black and with pale brown

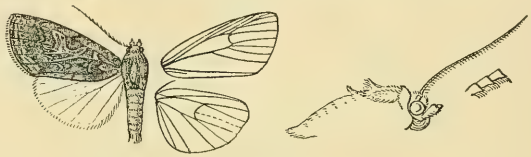


Fig. 67.—*Laphygma apertura*, ♂. ⅔.

centres, the former narrow, oblique, its lower extremity produced and confluent with the latter which is produced at upper extremity, some ochreous above base of vein 2; an oblique waved black line from lower angle of cell to inner margin, interrupted by the streak on vein 2; postmedial double filled in with ochreous, strongly bent outwards below costa, then oblique, minutely waved, and incurved at discal and submedian folds, some minute pale points beyond it on costa; a subterminal series of ochreous striæ with small somewhat dentate black marks on their inner side except towards costa; a series of ochreous striæ just before termen on which there is a series of black points; cilia with fine whitish line at base. Hind wing pure white with slight dark points on apical half of termen; the underside with the costa slightly tinged with brown.

Hab. C. China, Ichang (*Mrs. Pratt*), 1 ♂; Madras, Nilgiris (*Hampson*), 1 ♂, 1 ♀; Ceylon, Hambantota (*Pole*), 1 ♂ type *synstictis*. *Exp.* 24–32 millim.

Larva. Bainbrigge-Fletcher, Spolia Zeylanica, 1908, p. 95.

Jet-black, the segmental interstices creamy white, the prothorax with three yellow spots, the other segments with slight pale yellow dorsal spots forming a disconnected line; subdorsal line formed of pale yellow marks; spiracular line pale yellow; ventral surface glaucous green with white points; anus edged with orange; head

black with orange spot above the jaw and with numerous black hairs. Food-plant: *Drosera*, especially the stems, forming a cocoon in the earth. 8.

Sect. II. Antennæ of male ciliated.

A. Fore wing with the orbicular narrow, oblique elliptical.
  a. Fore wing with the medial line angled inwards in submedian fold ..... *exempta.*
  b. Fore wing with the medial line not angled inwards in submedian fold ..... *frugiperda.*
B. Fore wing with the orbicular round or slightly elliptical.
  a. Head and tegulæ ochreous white ..... *flavimaculata.*
  b. Head and tegulæ concolorous with thorax ..... *exigua.*

3875. Laphygma exempta. (Plate CXXVIII. fig. 24.)

Agrotis exempta, Wlk. x. 355 (1856).
Prodenia bipars, Wlk. xi. 724 (1857).
Prodenia ingloria, Wlk. xv. 1679 (1858).

♂. Head and thorax grey tinged with red-brown, the head and basal half of tegulæ browner; palpi with slight dark marks at side of 2nd joint; tarsi brown ringed with white; abdomen ochreous tinged with brown. Fore wing grey tinged with brown and suffused in parts with purplish red especially on costal half from medial to subterminal line; subbasal line represented by indistinct double dark striæ from costa and cell; an oblique black striga with some purplish red beyond it across submedian interspace before the antemedial line, which is double, rather oblique, waved, excurved in submedian interspace; claviform purplish red, rather incompletely defined by black; orbicular grey tinged with olive-brown and slightly defined by black, oblique elliptical, and with pale bar beyond it; reniform slightly and incompletely defined by black and with a diffused blackish mark in centre; the median nervure and veins arising from it slightly streaked with whitish on medial area; traces of an oblique waved medial line from lower angle of cell to inner margin; postmedial line double, the outer line indistinct, bent outwards below costa, then minutely waved, angled inwards in discal fold and incurved below vein 4, some pale points beyond it on costa; a diffused oblique whitish shade from apex to vein 6, the subterminal line arising from it, whitish, minutely waved, incurved below vein 3, with some wedge-shaped black streaks before it at middle, above and below vein 4 extending to postmedial line; a terminal series of slight black lunules; cilia greyish tinged with rufous and with slight rufous line near base. Hind wing ochreous white, the veins tinged with brown, the costal area and termen suffused with brown; a fine dark terminal line; cilia white; the underside with the costal area slightly irrorated with brown, a terminal series of blackish points from apex to vein 2.

♀. Fore wing more uniform fuscous brown, without the oblique pale bar beyond the reniform.

Hab. Gold Coast, Accra (*Sir G. Carter*), 1 ♂; Lagos (*Strahan, Boag*), 2 ♂, 4 ♀; Nigeria, Old Calabar (*Sampson*), 3 ♂, 8 ♀; Soudan, White Nile (*Dunn*), 1 ♂, 1 ♀; Br. E. Africa, N'dmu (*Betton*), 1 ♂, Eb Urru (*Betton*), 2 ♀, Machakos (*Crawshay*), 1 ♀; Uganda, Mulema (*Doggett*), 1 ♂, Ketoma (*Doggett*), 1 ♂, 1 ♀, Hoima (*Christy*), 1 ♀; Mozambique, Beira (*Sheppard*), 1 ♂, 1 ♀; Rhodesia, Bulawayo (*Marshall, Eyles*), 3 ♂, 2 ♀; Transvaal (*Cholmley*), 1 ♂, 1 ♀; Natal, Durban (*Gooch, Wilkinson*), 1 ♂, 4 ♀; Aden (*J. J. Walker, Yerbury*), 2 ♂, 3 ♀; Madras, Palnis (*Campbell*), 1 ♀; Ceylon, Maskeliya (*Pole*), 1 ♀, Haldamulla (*Mackwood*), 1 ♀; Singapore (*Ridley*), 1 ♂, 1 ♀; Queensland, Cooktown (*Lower*), 1 ♂, Townsville (*Dodd*), 1 ♀, Mackay (*Lower*), 1 ♀, Moreton Bay (*Diggles*), 1 ♂, 1 ♀, types *bipars* and *ingloria*; N. S. Wales, Sydney (*de la Garde*), 1 ♀; W. Australia, Sherlock R. (*Clements*), 1 ♀; Hawaii, Honolulu (*Blackburn, Mathew, Perkins*), 7 ♂, 2 ♀, Kona (*Perkins*), 2 ♂, 1 ♀, Waialua (*Perkins*), 1 ♂, 1 ♀, Lanai (*Perkins*), 1 ♂; Hab. ign. 1 ♂ type. *Exp.* 26–38 millim.

Larva. Dull olive-brown with numerous pale streaks, the ventral surface pale; pale dorsal and subdorsal stripes edged with whitish; a sinuous pale line above stigmata, which are black with a small whitish spot behind them on abdominal somites; head and thoracic plate dark brown.

3876. **Laphygma frugiperda.** (Plate CXXVIII. fig. 26.)

Phalæna frugiperda, Smith & Abbot, Ins. Georgia, ii. p. 191, pl. 96 (1797); Geyer, Zutr. 22, no. 342, ff. 683, 684; Riley, 4th Report U.S. Ent. Comm. p. 353, pl. 62. f. 2; Smith, Cat. Noct. N. Am. p. 168.
Laphygma macra, Guen. Noct. i. p. 157 (1852); Druce, Biol. Centr.-Am., Het. i. p. 267.
Laphygma inepta, Wlk. ix. 190 (1856).
Prodenia signifera, Wlk. ix. 193 (1856); Druce, Biol. Centr.-Am., Het. i. p. 269.
Prodenia plagiata, Wlk. ix. 194 (1856).
Prodenia autumnalis, Riley, 3rd Rept. Ins. Mo. p. 109, ff. 44-49 (1871); and Am. Ent. ii. p. 363, ff. 221, 223; and 8th Rept. Ins. Mo. p. 48, ff. 26–27.
Prodenia fulvosa, Riley, 8th Rept. Ins. Mo. p. 49 (1876).
Prodenia obscura, Riley, 8th Rept. Ins. Mo. p. 49 (1876).
Caradrina flavimaculata, Druce, Biol. Centr.-Am., Het. i. p. 280 (part.), nec Harv.

♂. Head and thorax ochreous suffused with reddish brown; palpi with blackish patch at side of 2nd joint; frons with blackish bar above; vertex of head suffused with fuscous; tegulæ with fuscous patches; pectus whitish; fore coxæ and femora suffused with fuscous; abdomen ochreous white suffused with reddish brown leaving slight pale segmental lines, the anal tuft tinged with rufous. Fore wing ochreous whitish suffused with fuscous and reddish brown, the inner area paler; subbasal line represented by double oblique dark striæ from costa; a black streak below base of cell curved up to cell at extremity; a minute whitish spot defined by black on outer

side in cell before the antemedial line, which is indistinctly double, oblique, waved, somewhat bent outwards in submedian fold; claviform represented by a diffused brownish streak; orbicular whitish defined by black and with pale brown centre, a whitish bar beyond it and above base of vein 2; reniform with black and white bar on inner side, its outer edge slightly defined by black and with irregular white marks at upper extremity; a slight white fork at bases of veins 4, 3; an indistinct oblique waved line from lower angle of cell to inner margin; postmedial line indistinct, double, strongly bent outwards below costa, then minutely waved, incurved at discal fold and below vein 4, some white points beyond it on costa; an oblique diffused whitish shade from apex to vein 6, the whitish subterminal line arising from it, excurved at middle and bent outwards to tornus, some short black streaks before it in the interspaces at middle; a fine white line before termen with series of slight black streaks from it to the black terminal striæ; cilia brownish with fine white line at base followed by a dark line. Hind wing semihyaline white, the apex suffused with brown; a dark terminal line from apex to vein 2; the underside with the costal area slightly irrorated with fuscous, a terminal series of black striæ from apex to vein 2.

♀. Much more fuscous brown, the costal area and veins irrorated with grey, the lines less distinct; the orbicular and reniform with slight whitish annuli, the former without pale bar beyond it and no white streak at lower angle of cell, the whitish fascia from apex obsolete.

Ab. 1. *fulvosa*, ♂. Fore wing somewhat more suffused with purplish, the white fascia from apex indistinct.

Hab. Canada; U.S.A., New York (*Doubleday*, *Riley*), 3 ♂, 6 ♀, type *macra*, Pennsylvania, Philadelphia, 1 ♀, Georgia (*Abbot*), 1 ♂ type *signifera*, Florida, Nebraska, Kansas, Texas, Dallas (*Boll*), 4 ♂, 1 ♀, New Mexico, Hot Springs, 1 ♀; Mexico, Jalapa (*Trujillo*, *Hoege*), 3 ♂, 4 ♀, Orizaba (*Trujillo*), 1 ♀, Durango (*Forrer*, *Becker*), 2 ♂, 1 ♀, Tabasco (*H. H. Smith*), 1 ♂, 1 ♀, Coatepec (*Brooks*), 1 ♀; Guatemala, Vera Paz (*Champion*), 1 ♂, Cerro Zunil (*Champion*), 1 ♀, S. Geronimo (*Champion*), 1 ♂, 1 ♀; Honduras, Belize (*Blancaneaux*), 1 ♀; Costa Rica, Candalaria Mts. (*Underwood*), 1 ♂, 2 ♀, Punta Arenas (*J. J. Walker*), 1 ♂; Panama, Bugaba (*Champion*), 1 ♂, 1 ♀, Chiriqui (*Champion*, *Ribbé*), 1 ♂, 3 ♀, Godman-Salvin Coll.; Jamaica (*Gosse*), 1 ♂ type *plagiata*, Cinchona (*Fawcett*), 1 ♂; Cuba, Santiago (*Schaus*), 3 ♂, 3 ♀; Haiti (*Tweedie*), 1 ♂; St. Lucia (*Cowie*), 2 ♂, 2 ♀; Grenada (*H. H. Smith*), 1 ♂, 2 ♀; Barbados (*Frampton*), 2 ♂, 3 ♀; Venezuela (*Dyson*), 1 ♂, 2 ♀; Br. Guiana (*McIntire*), 2 ♂, 1 ♀, Rockstone (*Kaye*), 1 ♀; Brazil, Amazons, Pará (*Austen*), 1 ♂, 3 ♀, Breves (*Austen*), 1 ♂, Paraña de Byassu (*Austen*), 1 ♂, Santarem (*Bates*), 1 ♂, 1 ♀, type *inepta*, Rio Negro (*Trumbull*), 1 ♀, Bahia (*Meade-Waldo*), 1 ♀, São Paulo (*D. Jones*), 2 ♂; Uruguay, Monte Video (*Nicholl*), 1 ♂; Paraguay, Sapucay, 11 ♂, 11 ♀; Argentina, Goya (*Perrins*), 1 ♂, Tucuman, 1 ♀, Sta Fé, Ocampo

(*Wagner*), 1 ♀, Buenos Ayres (*Thomas, Wilkinson*), 3 ♂, 2 ♀. *Exp.* 32–40 millim.

Larva. Head black to brown, reticulate, a pale V-mark over clypeus. Body cylindrical, smooth, the tubercles not projecting, obscure brownish-shaded, the dorsum broadly paler, sometimes whitish; lateral area dark-shaded between the narrow obscure pale subdorsal and broad whitish, reddish-filled substigmatal band, the latter not very sharply defined from the subventral area: cervical shield dark, cut by a whitish line. Food-plants: Various.—H. G. D.

3877. **Laphygma flavimaculata.** (Plate CXXVIII. fig. 27.)

Caradrina flavimaculata, Harv. Can. Ent. viii. p. 54 (1876); Druce, Biol. Centr.-Am., Het. i. p. 280; Smith, Cat. Noct. N. Am. p. 168.

Head and tegulæ ochreous white, the latter edged with black scales; palpi with black patch on 2nd joint; frons with slight lateral black bars; antennæ fuscous; thorax brown mixed with black and ochreous white; pectus and legs whitish mixed with some brown, the tarsi black ringed with white; abdomen grey, the basal crest black and white. Fore wing grey suffused with brown and irrorated with black, the postmedial area somewhat paler except on costal area; subbasal line represented by double black striæ from costa and cell; antemedial line double, oblique, waved; orbicular ochreous white defined by black, its centre tinged with rufous or fiery red, irregularly rounded; reniform with reddish brown centre with whitish lunule on it and ochreous annulus defined by black; a diffused oblique waved medial line from lower angle of cell to inner margin; postmedial line double filled in with whitish, strongly bent outwards below costa, then minutely waved, incurved at discal fold and below vein 4, some pale points beyond it on costa; subterminal line indistinct, whitish, angled outwards at vein 7 and excurved at middle; a terminal series of rather triangular black points; cilia whitish tinged with brown, a dark line near base followed by a slight line at middle. Hind wing semihyaline white, the veins brown, the costal and inner areas and termen tinged with brown; a fine brown terminal line; the underside with the costal area irrorated with black, a terminal series of black points from apex to vein 2.

Hab. U.S.A., Oregon, Colorado, Durango (*Oslar*), 1 ♂, 1 ♀, California, 2 ♂, 1 ♀ type, Sta. Barbara (*Van Zandt, d'Urban*), 2 ♂, 1 ♀, Arizona, Prescott (*Kunzé*), 2 ♂, 2 ♀, Phœnix (*Kunzé*), 1 ♂, 3 ♀; Mexico, Sonora (*Morrison*), 1 ♂, Godman-Salvin Coll. *Exp.* 26–34 millim. Hardly separable from *L. exigua*.

3878. Laphygma exigua.

Noctua exigua, Hübn. Eur. Schmett., Noct. f. 362 (1808); Dup. Lép. Fr. vi. p. 45, pl. 75. f. 2; Mill. Icones, pl. 75. f. 2; Hmpsn. Moths Ind. ii. p. 259; Staud. Cat. Lep. pal. p. 195.
Noctua fulgens, Geyer, Eur. Schmett., Noct. f. 796 (1833).
Caradrina pygmæa, Rmbr. Ann. Soc. Ent. Fr. 1834, p. 384, pl. 8. f. 2; Dup. Lép. Fr. Suppl. iii. p. 321, pl. 29. f. 5.
Caradrina junceti, Zell. Isis, 1847, p. 445.
Laphygma cycloides, Guen. Noct. i. p. 157 (1852).
Laphygma caradrinoides, Wlk. ix. 190 (1856).
Caradrina sebghana, Aust. Le Nat. 1880, p. 212.
Caradrina venosa, Butl. Ent. Mo. Mag. xvii. p. 7 (1880).

Head and thorax red-brown mixed with some grey; palpi with fuscous patch on 2nd joint; lower part of frons whitish; tegulæ whitish, brown at base and tips; tarsi black ringed with white; abdomen whitish dorsally suffused with fuscous. Fore wing whitish suffused with red-brown and slightly irrorated with black; subbasal line represented by double black striæ from costa filled in with white and single oblique striga from cell defined by white on outer side; antemedial line double filled in with whitish, oblique, waved; claviform represented by a slight rufous streak slightly defined by black at extremity; orbicular small, round, with fiery-red centre

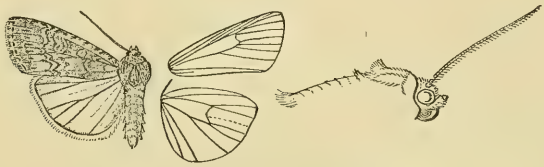


Fig. 68.—*Laphygma exigua*, ♂. ½.

and ochreous annulus defined by black; reniform with red-brown centre with white lunule on it and ochreous annulus defined by black; an indistinct oblique waved medial line from lower angle of cell to inner margin; postmedial line double filled in with whitish, strongly bent outwards below costa, then minutely waved, incurved at discal fold and below vein 4, some whitish points beyond it on costa; subterminal line slight, white, angled outwards at vein 7 and excurved at middle; a terminal series of rather triangular black points; cilia greyish tinged with brown and intersected with fuscous, a dark line near base followed by a slight medial line. Hind wing semihyaline white, the veins brown; the costa, inner margin, and termen tinged with brown, a brown terminal line; the underside with the costal area irrorated with brown, a terminal series of black points from apex to vein 2.

Ab. 1. *pygmæa*. Very small; fore wing almost uniform pale brown, the orbicular with dark point in centre.

Ab. 2. Much greyer; fore wing with the antemedial line on

outer side and postmedial line on inner side strongly defined by black on inner area.—N. S. Wales.

Hab. Britain (*Dobree-Fox*); Netherlands, Borkum I.; France, Leech Coll.; Switzerland, Engadine, Leech Coll.; Spain, Catalonia, Zeller Coll., type *junceti*, Sierra Nevada (*Walsingham*), Gibraltar; Italy, Capri (*C. S. Browne*), Sicily, Zeller Coll.; Dalmatia, Frey & Leech Colls.; Algeria (*Mrs. Nicholl*), 1 ♂, 1 ♀; Morocco, Tangier (*Leech*), 1 ♂, 1 ♀; Madeira (*Wollaston*), 1 ♀; Canaries, Teneriffe (*Leech, W. White*), 1 ♂, 1 ♀, Guimar (*Walsingham*), 1 ♂; S. Russia, Sarepta (*Christoph*); Cyprus (*Miss Bate*), 1 ♂; Asia Minor; Syria, Lebanon (*Pratt*), 1 ♂, Mardin; Up. Egypt, Aboukir (*Graves*), 1 ♂, Etbai (*McAlister*), 1 ♂; Sokotra, Abd-el-Kuri (*Grant*), 1 ♂, Hadibu Plain (*Grant*), 1 ♀; Br. E. Africa, Machakos (*Crawshay*), 1 ♂, 1 ♀, Eb Urru (*Betton*), 1 ♀; Bechuanaland, N'Gami (*Lugard*), 1 ♂, 1 ♀; Transvaal, Piet Retief (*Crawshay*), 1 ♀, Pretoria (*Janse*), 2 ♀; Orange R. Colony, Bloemfontein (*Eckersley*), 1 ♀; Natal, Estcourt (*Hutchinson*), 2 ♀, Tugela R. (*Reynolds*), 1 ♂, 1 ♀, Durban (*Leigh*), 1 ♂, 1 ♀; Basutoland, Maseru (*Crawshay*), 1 ♀; Cape Colony (*Sir A. Smith*), 1 ♂, 1 ♀, Deelfontein (*Col. Sloggett*), 1 ♀; Aden (*Yerbury, Grant*), 1 ♂, 2 ♀; Persian Gulf, Fao (*Cumming*), 2 ♂; Japan, Yokohama (*Pryer*), 1 ♂; Centr. China, Ichang (*Mrs. Pratt*), 1 ♀; Punjab, Simla (*Reed, Harford*), 2 ♀, Cambellpur (*Yerbury*), 3 ♂, 1 ♀, Dharmsála (*Hocking*), 2 ♂, 3 ♀, Allahabad, 1 ♀, Manpuri, 1 ♀; Sikhim (*Dudgeon*), 1 ♀; Madras, Gooty (*Campbell*), 1 ♀, Nilgiris (*Hampson*), 1 ♂, 2 ♀; Ceylon, Puttalam (*Pole*), 1 ♂, Trincomali (*Yerbury*), 1 ♀; Burma, Rangoon (*Scott*), 1 ♀; Yunnan (*Hobson*), 1 ♀; Queensland, Brisbane (*Turner*), 1 ♀; W. Australia, Sherlock R. (*Clements*), 1 ♀; N. S. Wales, Broken Hill (*Lower*), 2 ♂, 1 ♀; Hawaii, Honolulu (*Blackburn*), 1 ♂ type *venosa*, Kona (*Perkins*), 1 ♀, Lahana (*Perkins*), 1 ♂. *Exp.* 26–34 millim.

Larva. Meyr. Brit. Lep. p. 113; Barrett. Lep. Brit. v. p. 273, pl. 220 f. 1.

Pinkish brown, dots blackish; spiracular line pale ochreous, dark-edged above. Food-plants: *Plantago* and low growing herbs. 8–9. In Egypt destructive to Lucerne and Cotton.

Genus **NEOLAPHYGMA**, nov.

Type, *N. leucoplaga*.

Proboscis fully developed; palpi upturned, the 2nd joint hardly reaching to middle of frons and fringed with long hair in front, the 3rd short; frons smooth; eyes large, round; antennæ of female ciliated; thorax clothed with hair and scales mixed, the prothorax without crest, the metathorax with paired crests formed of long hair and spatulate scales; build slender; tibiæ fringed with scales, the tarsi with tufts of scales on 1st joint; abdomen long and slender, without crests. Fore wing very narrow, the margins subparallel, the apex produced to a slight point, the termen slightly excised below it then strongly excurved and not crenulate; vein 3 from before angle of cell; 4, 5 from angle; 6 from upper angle; 7, 8 and 10 stalked, 9 absent, 7 and 10 almost from a point; 11 from cell. Hind wing with veins 3, 4 stalked; 5 obsolescent from just below middle of discocellulars; 6, 7 stalked; 8 anastomosing with the cell to middle.

3879. **Neolaphygma leucoplaga**, n. sp.

♀. Head and tegulæ green tinged with rufous and with darker bars above frons and between antennæ; palpi dark brown mixed with whitish; antennæ blackish; thorax green with some grey on dorsum; pectus and legs dark brown mixed with grey, the fringes of scales on tibiæ and tarsi green, the tibiæ and tarsi ringed with white, the hind tarsi rufous; abdomen fuscous with slight greyish segmental lines and grey bands on terminal segments, the anal tuft ochreous, the ventral surface grey. Fore wing purplish grey suffused in parts with red-brown and irrorated with black, some sap-green suffusion on antemedial area to below the cell and on postmedial area; subbasal line represented by a black striga from costa defined by green on outer side, a round pure white patch beyond it from costa to just below cell; antemedial line indistinct

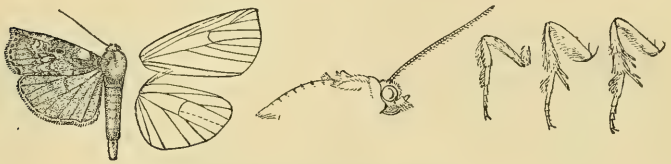


Fig. 69.—*Neolaphygma leucoplaga*, ♀. ½.

except at costa and inner margin, blackish defined by whitish on inner side, waved from costa to submedian fold, then strongly angled inwards on vein 1 and bent outwards above inner margin; orbicular small, elongate elliptical, with deep black centre and grey annulus slightly defined by black, the cell beyond it green; reniform with irregular centre defined by black and whitish annulus; an irregularly waved medial dark line; postmedial line black much interrupted, defined by white on outer side then by red-brown, strongly bent outwards below costa, then dentate, closely approximated to the reniform and incurved below vein 4, some green beyond it below costa and some white points on costa with rufous streaks between them; traces of a pale subterminal line; a terminal series of small black spots slightly defined by white on inner side; cilia ochreous and rufous with a red-brown line near base. Hind wing semihyaline purplish grey suffused with brown, paler at base; a brown terminal line; cilia with fine brown line near base; the underside with the costal area white irrorated with dark brown, a diffused dark mark on costa near base, brownish discoidal lunule, diffused postmedial line bent outwards below costa, then oblique and obsolescent, and terminal lunulate line.

Hab. Ashanti, Kumasi (*Whiteside*), 1 ♀ type. *Exp.* 30 millim.

Genus **LOPHOTARSIA.**

Type.
Lophotarsia, Hmpsn. Ann. S. Afr. Mus. ii. p. 299 (1902) ..... *ochroprocta.*

Proboscis fully developed; palpi upturned, the 2nd joint hardly reaching to middle of frons and moderately fringed with scales in front, the 3rd short; frons smooth; eyes large, round; antennæ of male minutely ciliated; thorax clothed almost entirely with scales and without crests; build slender; tibiæ fringed with scales, the tarsi with large tuft of scales on 1st joint; abdomen long and slender, without crests, the anal tuft very long. Fore wing very long and narrow, the margins subparallel, the apex rectangular, the termen evenly curved and not crenulate; vein 3 from before angle of cell; 4, 5 from angle or very shortly stalked; 6 from just below upper angle; 7, 8, 9, 10 stalked; 11 from cell. Hind wing with veins 3, 4 stalked; 5 obsolescent from just below middle of discocellulars; 6, 7 stalked; 8 anastomosing with the cell to middle.

3880. **Lophotarsia ochroprocta.**

Lophotarsia ochroprocta, Hmpsn. Ann. S. Afr. Mus. ii. p. 299 (1902).

♂. Head rufous with deeper rufous bars above frons and between antennæ; thorax grey tinged with rufous, the tegulæ with rufous medial line defined by pale yellow in front; legs suffused with brown and rufous; abdomen grey, the anal tuft and ventral surface pale yellow suffused with rufous. Fore wing grey suffused with fuscous, the inner area from before middle and the postmedial area except at costa tinged with ochreous and rufous, the veins beyond the cell slightly streaked with rufous; a black-brown subbasal line straight and erect from costa to vein 1, then bent outwards and diffused; traces of a diffused dark antemedial line; orbicular with faint diffused dark outline, round, a grey-white

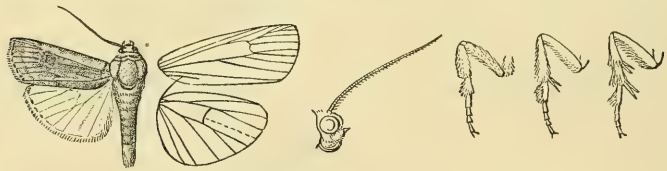


Fig. 70.—*Lophotarsia ochroprocta*, ♂. ½.

patch beyond it before the reniform which has its centre defined by black and pale grey annulus defined by diffused fuscous; postmedial line represented by a series of black striæ and points, strongly bent outwards below costa, excurved to vein 4, then incurved, some faint grey points beyond it on costa; subterminal line only defined by the contrast between the rufous and grey areas, incurved below vein 3 and bent outwards to tornus; a terminal series of blackish points; cilia mixed with rufous at tips. Hind wing pure white, the termen and cilia at apex suffused with fuscous brown; the underside with the costal area slightly irrorated with brown, a slight postmedial line bent outwards below costa and ending at vein 7, some points on termen from apex to vein 4.

Hab. Transvaal, White R. (*Cooke*), 1 ♂; Natal, Estcourt (*Hutchinson*), 1 ♂ type. *Exp.* 34–38 millim.

Genus **STAUROPIDES**, nov.

Type, *S. superba*.

Proboscis fully developed; palpi porrect, moderately scaled and extending to just beyond the frons, which has a large truncate conical prominence with raised edges and a corneous plate below it, the vertex of head with slight ridge; eyes large, round; antennæ of male bipectinate with moderate branches to beyond middle, the apical part simple; thorax clothed almost entirely with scales and with slight double ridge-like crest; tibiæ fringed with long hair and scales; abdomen with dorsal crests on basal segments. Fore wing with the apex rounded, the termen evenly curved and hardly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form a small areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of female bipectinate with short branches to beyond middle, the apical part simple.

3881. Stauropides superba.

Antachara superba, Druce, A. M. N. H. (6) xiii. p. 361 (1894), ♂.

Head and thorax pale blue-green; palpi ochreous tinged with rufous; frons with lateral red-brown bars; pectus and legs ochreous tinged with rufous, the tibiæ pale green on outer side, the tarsi dark brown ringed with white; abdomen pale greenish tinged with rufous in parts. Fore wing pale blue-green; a very oblique sinuous black streak from base of costa to subcostal nervure; antemedial line represented by a dark point on costa; orbicular with faint white annulus defined by black on outer side, a black and white bar below it from cell to submedian fold, a rufous band beyond them

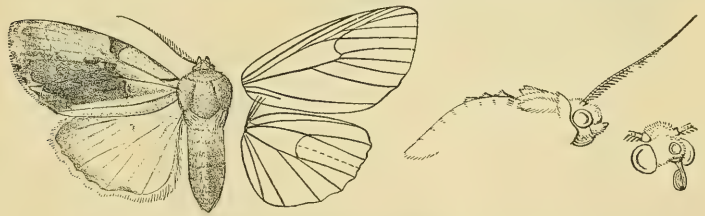


Fig. 71.—*Stauropides superba*, ♀. ½.

from costa to submedian fold with waved inner edge towards costa and below vein 5 confluent with the rufous terminal area; reniform greyish defined by black, narrow, very oblique and produced at lower extremity, obsolescent above; postmedial line almost obsolete towards costa, strongly bent outwards below costa, then sinuous, incurved at discal fold, very oblique below vein 4, angled inwards in submedian fold and connected by a black streak with the medial bar, then obsolete; subterminal line indistinct, waved, oblique from vein 4 to below 2 and with green patch beyond it, then erect; a series of black striæ just before termen; cilia brown with a pale line at base. Hind wing white, the apical area and termen tinged

with brown ; a waved dark terminal line ; cilia ochreous white with a brown line through them and brown tips ; the underside with the costa and terminal area irrorated with brown.

Hab. Ecuador, Sarayacu (*Buckley*), type † ♂ in Coll. Druce ; Peru (*Simons*), 1 ♀. *Exp.* 58 millim.

Sect. II. Antennæ of female almost simple.

3882. Stauropides persimilis, n. n.

Antachara superba, Druce, A. M. N. H. (6) xiii. p. 361 (1894), ♀ ; id. Biol. Centr.-Am., Het. ii. p. 484, pl. 94. f. 6.

Head and thorax whitish tinged with pale blue-green, the edges of tegulæ and patagia and the metathorax with some rufous and a few black scales ; palpi ochreous white, blackish above ; pectus and legs ochreous white slightly tinged with rufous ; abdomen ochreous white slightly irrorated with dark brown and with the crests on basal segments rufous. Fore wing very pale blue-green ; a very oblique black streak from base of costa to median nervure and another on and above inner margin before the antemedial line which is represented by black points on costa, median nervure, and vein 1 ; orbicular with very faint white annulus except on outer side where it is defined by black and with a white and black bar below it from

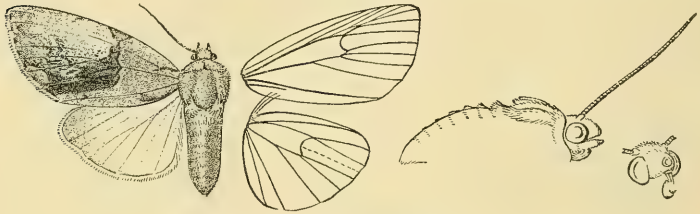


Fig. 72.—*Stauropides persimilis*, ♀. ½.

cell to submedian fold, a rufous band beyond them from costa to submedian fold, with waved inner edge towards costa and below vein 5 confluent with the rufous terminal area ; reniform rufous defined by black on inner side, undefined on outer ; a blackish fascia below vein 2 from the medial line to termen ; postmedial line represented by a brown striga from costa, then almost obsolete to vein 6, indistinct and dentate to submedian fold, then almost obsolete ; an oblique dark streak from termen below vein 4 to vein 2 with pale green patch beyond it ; a series of dark striæ just before termen. Hind wing semihyaline white, the termen irrorated with red-brown ; the underside with the costa and termen slightly irrorated with red-brown.

Hab. Costa Rica, Santa Clara (*Zurcher*), 1 ♀, Godman-Salvin Coll. ; Trinidad (*Kaye*), 1 ♂. *Exp.* ♂ 46, ♀ 58 millim.

Genus **XYLOMYGES.**

Type.

Xylomyges, Guen. Noct. i. p. 147 (1852) ..... *eridania.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and moderately fringed with hair, the 3rd short; frons smooth and smoothly scaled, with a slight corneous plate below it; eyes large, round; antennæ of male ciliated; thorax clothed chiefly with scales and with double ridge-like dorsal crest; tibiæ fringed with rather long hair; abdomen with dorsal crests on basal segments. Fore wing with the apex rounded, the termen evenly curved, crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with the subterminal line oblique from termen below vein 4 to postmedial line at submedian fold.
  a. Fore wing prominently streaked with brown, the oblique part of subterminal line below vein 4 defined by white below ..... *eridania.*
  b. Fore wing much more uniform in colour, the oblique part of subterminal line below vein 4 not defined by white below ..... *peruviana.*
B. Fore wing with the subterminal line much less oblique between veins 4 and 2 and well separated from termen and postmedial line ..... *ochrea.*
C. Fore wing with the subterminal line oblique from termen at vein 4 to submedian fold and dentate on veins 3 and 2 ..... *sunia.*

3883. Xylomyges eridania.

Noctua eridania, Cram. Pap. Exot. iv. p. 133, pl. 358. ff. E, F (1782); Snell. Tijd. v. Ent. xxx. p. 36, pl. 3. ff. 2, 2*a*; Smith, Cat. Noct. N. Am. p. 169.
Noctua linea, Fabr. Ent. Syst. 3. 2. p. 106 (1794).
Phalæna phytolaccæ, Smith & Abbot, Ins. Georgia, ii. p. 193, pl. 97 (1797).
Xylomyges putrida, Guen. Noct. i. p. 148 (1852).
Xylomyges amygia, Guen. Noct. i. p. 149 (1852).
Leucania externa, Wlk. ix. 114 (1856).
Xylina inquieta, Wlk. xi. 632 (1857).
Xylina bipunctata, Wlk. xi. 629 (1857).
Prodenia strigifera, Wlk. xv. 1678 (1858).
Actinotia derupta, Morr. Proc. Ac. Nat. Sci. Phil. 1875, p. 62.
Prodenia ignobilis, Butl. P. Z. S. 1878, p. 485.
Leucania nigrofascia, Hulst, Bull. Brooklyn, Ent. Soc. iii. p. 77 (1881), & iv. p. 7, pl. 1. f. 9.
Callierges recondita, Möschl. Abh. Senck. Ges. xvi. p. 140 (1890).
Laphygma orbicularis, Druce, Biol. Centr.-Am., Het. i. p. 267 (nec Wlk.).

Head, thorax, and abdomen ochreous tinged with rufous; palpi white in front and with brown and rufous marks at side of 2nd joint; tarsi brownish ringed with white. Fore wing ochreous white tinged with rufous and sparsely irrorated with black especially on inner area, the veins of terminal area slightly streaked with black; a slight oblique blackish streak above inner margin before the antemedial line, which is represented by a black point

below costa and indistinct oblique dentate line from submedian fold to inner margin; orbicular represented by a minute very indistinct dark mark, the reniform by a small greyish mark with two blackish points on inner side and one on outer; a faint oblique medial shade from costa to reniform and traces of a waved line from submedian fold to inner margin; postmedial line double and filled in with whitish towards costa, strongly bent outwards below costa, then represented by double black points on the veins, incurved below vein 4 and with waved whitish line below vein 2, some whitish points with slight rufous streaks between them beyond it on costa; postmedial line very indistinct and whitish from costa to below

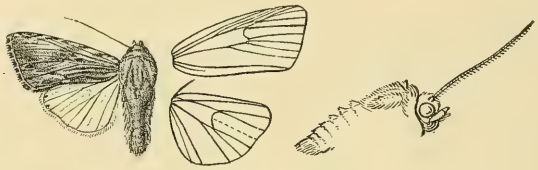


Fig. 73.—*Xylomyges eridania*, ♂. ½.

vein 4 where it is angled outwards to termen, angled outwards above veins 7, 6 and with slight rufous streak before it above vein 7, below vein 4 running inwards as an oblique yellowish-white streak defined by rufous above to near postmedial line at vein 2; a terminal series of black points; cilia rufous intersected with white. Hind wing pure semihyaline white, the inner margin and veins towards apex faintly tinged with ochreous; the underside with slight black irroration on apical part of costal area and some black points on termen towards apex.

Ab. 1. *externa*. Fore wing with broad black fascia from reniform to termen.

Hab. U.S.A., Georgia, Florida, Texas, 2 ♂, 1 ♀; Mexico, Jalapa (*Trujillo*), 3 ♂, Cordova (*Rumeli*), 1 ♂, Las Vigas (*Hoege*), 1 ♂, Teapa (*H. H. Smith*), 1 ♂, 1 ♀; Guatemala, Las Mercedes (*Champion*), 1 ♂, Pantaleon (*Champion*), 1 ♂; Costa Rica, Irazu (*Rogers*), 1 ♀, Candalaria Mts. (*Underwood*), 1 ♂; Panama, Chiriqui (*Champion*), 1 ♂, Bugaba (*Champion*), 1 ♂, Godman-Salvin Coll.; Jamaica (*Bowring*), 1 ♂ type *ignobilis*, Moneague (*Walsingham*), 1 ♂, Castleton (*Kaye*), 1 ♂; Cuba, Santiago (*Schaus*), 3 ♂; Haiti (*Tweedie*), 1 ♀; Porto Rico; Guadeloupe; St. Vincent (*H. H. Smith*), 4 ♂; Trinidad, Cuparo (*Kaye*), 1 ♂: Surinam; Brazil, type † ♂ *bipunctata* in Mus. Oxon., Amazons, Ega (*Bates*), 1 ♂ type *strigifera*, R. Javary (*Trail*), 1 ♂, Neu Friburg, Rio Janeiro (*Wilson*), 1 ♂, 1 ♀; Paraguay, Sapucay (*Foster*), 4 ♂; Argentina, Gran Chaco, Florenzia (*Wagner*), 1 ♂; Hab. ign., 2 ♂ types *externa* and *inquieta*. *Exp.* 32–38 millim.

Larva. Head small, red-brown, a pale V-mark over clypeus.

Body robust, joints 5 and 12 enlarged; dark grey finely dotted with yellowish; dorsal line narrow, reddish; subdorsal broader, with a series of angular black marks above it; upper half of lateral space paler than the lower, a dark patch on joint 5; substigmatal band yellowish, dark-centered, obsolete on thorax; cervical shield dark. Food-plants: Various.—H. G. D.

3884. **Xylomyges peruviana.** (Plate CXXVIII. fig. 31.)

Laphygma peruviana, Wlk. xxxii. 650 (1865).
Laphygma communicata, Wlk. Char. Undescr. Het. p. 31 (1869).

Head and thorax white suffused with pale rufous; palpi with rufous marks at sides on 1st and 2nd joints; tegulæ with slight whitish medial line; tarsi brown ringed with white; abdomen ochreous tinged with brown. Fore wing ochreous faintly tinged with rufous and slightly irrorated with black except towards base; faint traces of an oblique rufous streak above inner margin before the hardly traceable oblique waved antemedial line; orbicular represented by a minute dark point, the reniform by a very faint greyish mark at upper angle of cell slightly defined by blackish on inner side; postmedial line hardly traceable, strongly bent outwards below costa, then represented by slight black points on the veins, incurved below vein 3; subterminal line represented by traces of an oblique pale streak from termen below vein 4 to vein 2 slightly defined by rufous above. Hind wing semihyaline white; the underside with the apex slightly irrorated with brown.

Hab. Peru, 3 ♂, 4 ♀, type and type *communicata*. *Exp.* 30–40 millim.

3885. **Xylomyges ochrea**, n. sp. (Plate CXXIX. fig. 1.)

♂. Head and thorax ochreous slightly irrorated with pale brown; palpi with slight brown mark at side of 2nd joint; abdomen white, the crests and anal tuft ochreous. Fore wing ochreous faintly tinged with rufous and irrorated with a few blackish scales, the base of inner margin, end of cell and area just beyond upper angle rather whiter; antemedial line absent; the orbicular represented by a faint minute dark mark, the reniform by a faint small dark spot; postmedial line represented by faint minute dark points on veins 6 to 2; traces of oblique whitish streaks from termen below apex and vein 4 to the postmedial line; a terminal series of black points; cilia yellowish with a slight rufous line through them. Hind wing hyaline white; the underside with a few blackish scales on apical half of costal area and some black points on termen towards apex.

Hab. Peru, Callao (*J. J. Walker*), 2 ♂ type. *Exp.* 36 millim.

3886. Xylomyges sunia. (Plate CXXIX. fig. 2.)

Xylomyges sunia, Guen. Noct. i. p. 149 (1852).
Xylina albula, Wlk. xi. 629 (1857).
Laphygma orbicularis, Wlk. xi. 719.
Laphygma caudata, Wlk. Char. Lep. Het. p. 32 (1869).

Head, thorax, and abdomen pale ochreous slightly tinged with rufous; palpi with slight brown marks at sides of 2nd joint. Fore wing ochreous white faintly tinged with rufous and irrorated with a few dark scales; a black streak below base of cell; very faint traces of an oblique waved antemedial line; orbicular represented by a few black scales, the reniform by a small greyish mark with some black scales at sides; postmedial line very indistinct, whitish, bent outwards below costa, then with black points on the veins, oblique below vein 4, some faint whitish points beyond it on costa; a faint oblique whitish streak from termen below apex; three slight oblique white streaks in echelon from termen below vein 4 to submedian fold near postmedial line slightly defined by brown above; a slight fuscous mark on inner margin before tornus; a terminal series of black points; cilia chequered white and brownish with slight brownish lunules at tips. Hind wing pure semihyaline white; the underside with the costal area irrorated with a few black scales towards apex, a terminal series of black points from apex to vein 2.

Ab. 1. *orbicularis*. Fore wing with the reniform prominent, black.

Hab. Honduras (*Dyson*), 1 ♂; Jamaica (*Cockerell*, *Kaye*), 2 ♀; Haiti (*Tweedie*), 4 ♂, types *albula* and *orbicularis*; St. Thomas; Dominica (*Elliott*), 1 ♂; Grenada (*H. H. Smith*), 1 ♂, 1 ♀; Barbados (*Frampton*), 1 ♂; Argentina, Gran Chaco, Florenzia (*Wagner*), 2 ♂, 2 ♀. Hab. ign., 2 ♂ type *caudata*. *Exp.* 32–36 millim.

Genus ANTHA.

	Type.
Antha, Staud. Rom. Mém. vi. p. 448 (1892)	*grata*.

Proboscis fully developed; palpi upturned, the 2nd joint not reaching vertex of head and smoothly scaled, the 3rd rather long; frons oblique, produced to a transverse ridge above; eyes large, rounded; antennæ of male minutely ciliated, a ridge of scales between antennæ; thorax clothed chiefly with scales, the prothorax with divided crest, the metathorax with slight crest; tibiæ moderately fringed with hair; abdomen long with small dorsal crests on basal segments. Fore wing with the costa nearly straight, the apex rectangular, the termen oblique below vein 4, the inner margin lobed near base; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

3887. Antha grata.

Leptina grata, Butl. Trans. Ent. Soc. 1881, p. 172; Hmpsn. Moths Ind. ii. p. 237; Staud. Cat. Lep. pal. p. 183.
Antha pretiosa, Staud. Rom. Mém. vi. p. 448, pl. 7. f. 6 (1892).

Head and thorax rufous mixed with whitish; palpi white in front, red-brown at sides; tegulæ brownish with white band and rufous tips; dorsum of thorax red-brown; pectus whitish mixed with brown, the tarsi dark ringed with white; abdomen whitish tinged with brown, the dorsal crests dark. Fore wing ochreous tinged with rufous, some pale pink suffusion in submedian interspace and below base of costa; a black-brown fascia on inner margin from near base; subbasal line represented by two slight oblique striæ from costa, the antemedial line by an oblique striga from costa, then by some points, a faint tooth in submedian interspace and a very elongate tooth above inner margin defined by white on

Fig. 74.—*Antha grata*, ♂. ½.

inner side; claviform very faintly defined by brown, narrow, acute at extremity; orbicular and reniform with pale pink annuli, the former with rufous centre, elongate, narrow, and slightly oblique, the latter constricted at middle, with pink centre defined by an irregular rufous line; a blackish patch on middle of costa; postmedial line dark brown defined on outer side by pinkish white on costa and below middle, strongly bent outwards below costa, then dentate, excurved to vein 4, then oblique, some white points beyond it on costa; a curved diffused pinkish subterminal band, slightly defined by red-brown on inner side except towards inner margin and crossed by dark streaks towards apex; the terminal area dark red-brown with blackish spots and a fine white line before the dark terminal line, the extremity of vein 1 defined by fine white streaks with black streaks above and below them and a white bar from their inner extremity to inner margin; cilia whitish with a waved dark line through them. Hind wing ochreous white suffused with brown especially on terminal area, a series of white striæ just before termen; cilia ochreous with a slight brown line through them; the underside with the costal and terminal areas broadly irrorated with brown, the former tinged with red, a small discoidal lunule and indistinct waved sinuous postmedial line.

Hab. E. Siberia, Ussuri; Japan, Tokio (*Maries*), 2 ♀ type, Oiwake (*Pryer*), 2 ♂, 4 ♀; Corea, Gensan (*Leech*), 1 ♂; W. China, Kwei-chow, 1 ♀; Assam, Naga Hills. *Exp.* 36-44 millim.

Genus ACRORIA.

	Type.
Acroria, Wlk. xv. 1730 (1858)	*terens.*
Antachara, Wlk. xv. 1740 (1858)	*diminuta.*
Alibama, Möschl. Abh. Senck. Ges. xiv. p. 43 (1888)	*terens.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and moderately scaled, the 3rd rather long; frons smooth, almost naked; eyes large, round; antennæ of male ciliated; thorax clothed chiefly with scales and with double ridge-like crest; tibiæ moderately fringed with hair; abdomen with dorsal crests on basal segments. Fore wing with the apex rounded, the termen crenulate, excised towards tornus; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with well-developed claviform connected by a streak with postmedial line ..... *terens.*
B. Fore wing with the claviform absent.
  a. Underside of fore wing of male thickly clothed with down-turned brown scales ..... *denterna.*
  b. Underside of fore wing smoothly scaled.
    a^1. Fore wing with wedge-shaped ochreous mark beyond subterminal line in submedian interspace extending to termen ..... *mexicana.*
    b^1. Fore wing with oblique ochreous striga on subterminal line in submedian interspace ..... *diminuta.*

3888. Acroria terens.

Hadena terens, Wlk. xi. 586 (1857).
Xylina infensa, Wlk. xi. pp. 628, 761 (1857).
Acroria villipes, Wlk. xv. 1730 (1858).
Alabama pulchra, Mösch. Abh. Senck. Ges. xiv. p. 44, pl. f. 27 (1888).
Dargida niphanda, Druce, Biol. Centr.-Am., Het. i. p. 270, pl. 26. f. 14 (1889), & ii. p. 475.

Head and thorax red-brown slightly tinged with fuscous; palpi in front and lower part of frons paler; tegulæ with black medial line; patagia with black streak near upper edge; tarsi banded with black; abdomen greyish suffused with reddish brown and fuscous. Fore wing red-brown slightly suffused with fuscous, the veins with slight dark streaks; subbasal line represented by slight double dark striæ from costa and single striga from cell; a black streak above inner margin before the antemedial line, which is double at costa, then oblique, sinuous, acutely angled outwards above inner margin; claviform defined by black, extending to cell, acute at extremity and with black streak from it to postmedial line; orbicular and reniform defined by black, the former round, the latter large, rounded, its outer edge excised and with two pale spots on it, its centre darker; a diffused oblique striga from middle of costa to reniform; postmedial line indistinctly double, bent outwards below costa, then waved, excurved to vein 5, then oblique, some pale points beyond it on costa; an indistinct pale subterminal line, angled outwards at vein 7,

excurved at middle and angled inwards at discal and submedian folds, crossed by black streaks from well before it to termen above vein 3 and below 2; a fine waved black terminal line with minute whitish points at the veins; cilia red-brown with fine pale line at base. Hind wing pure white, the veins tinged with brown; the costa towards apex and the termen to vein 2 suffused with brown; cilia white chequered with brown from apex to vein 2;

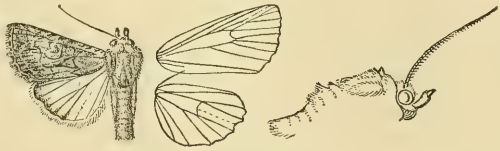


Fig. 75.—*Acroria terens*, ♂. ½.

the underside with the costal area and termen to vein 2 tinged and irrorated with red-brown.

Hab. Mexico, Jalapa (*Trujillo*), 1 ♀, Vera Cruz (*H. H. Smith*), 1 ♀; Guatemala (*Rodriguez*), 1 ♂, Volcan de Atitlan (*Champion*), 1 ♀; Costa Rica, Candalaria Mts. (*Underwood*), 1 ♀; Panama, Chiriqui (*Champion*), 1 ♀ type *niphanda*, Godman-Salvin Coll.; Jamaica, Cinchona (*Fawcett*), 1 ♀; Guadaloupe, 1 ♀; Grenada (*H. H. Smith*), 5 ♂, 1 ♀; Venezuela (*Dyson*), 1 ♀ type and type *infensa*; Brazil, Organ Mts., Tijuca (*Wagner*), 1 ♀. *Exp.* 28–34 millim.

3889. Acroria denterna. (Plate CXXIX fig. 3.)

Xylophasia denterna, Guen. Noct. i. p. 140 (1852).

Head and tegulæ ochreous mixed with rufous; frons with rufous bar; tegulæ with rufous lines near base, at middle and at tips; thorax ochreous slightly mixed with brown and with dark brown dorsal fascia; pectus and legs ochreous, the fore legs with brown mixed, the tarsi slightly banded with brown; abdomen ochreous suffused with dark brown except at base, the crests dark brown, the anal tuft suffused with rufous above. Fore wing pale ochreous with slight olive-brown streaks in the interspaces; a purplish brown fascia on inner margin from before middle, where it narrows to a point, to termen where it expands to submedian fold, a slight black streak on it on medial area above inner margin; subbasal and antemedial lines represented by double brown striæ from costa; orbicular very small, round, with faint pale annulus; reniform with pale annulus, its centre faintly defined by brown, somewhat constricted at middle; postmedial line with double brown striæ from costa, bent outwards below costa, then almost obsolete, dentate and produced to black points on the veins, incurved below vein 4, distinct and defined by whitish on outer side below

vein 1, some black-brown striæ beyond it from costa; an oblique brown shade from termen below apex followed by traces of a subterminal line which between vein 3 and submedian fold is distinct, whitish, oblique, irregular and defined by brown suffusion before and beyond it, with slight black streaks from it to termen above and below submedian fold; some dark points on middle of termen; cilia chequered ochreous and brownish. Hind wing ochreous white, the costal and terminal areas tinged with brown; cilia white tinged with brown in parts. Underside of fore wing with the cell clothed with downturned brown hair, a diffused pale mark at upper angle of cell, the area beyond the cell rufous; hind wing with the costal area irrorated with red-brown, traces of a curved postmedial line from costa to vein 4.

Hab. Brazil, Organ Mts., Tijuca (*Wagner*), 1 ♀, Rio Janeiro (*Wilson*), 1 ♂; Paraguay, Sapucay (*Foster*), 1 ♂. *Exp.* 40–42 millim.

3890. **Acroria mexicana**, n. sp. (Plate CXXIX. fig. 4.)

Xylophasia denterna, Druce, Biol. Centr.-Am., Het. i. p. 266 (part.), nec Guen.

♂. Head and tegulæ ochreous mixed with rufous; frons with brown bar; tegulæ with brown medial line; thorax ochreous with diffused rufous dorsal fascia; pectus and legs ochreous tinged with rufous; abdomen ochreous tinged with rufous, the crests red-brown. Fore wing pale ochreous slightly tinged with rufous; a brown fascia on inner margin from near base where it narrows to a point, to termen where it expands to submedian fold with a slight blackish streak on it on medial area above inner margin; subbasal and antemedial lines represented by faint double brown striæ from costa; orbicular and reniform indistinct, pale, the former round, the latter rather quadrate; postmedial line double towards costa, bent outwards below costa, then almost obsolete, dentate and produced to black points on the veins, incurved below vein 4 and below vein 1 double filled in with whitish, some dark striæ beyond it from costa; an oblique red-brown shade from termen below apex; an oblique whitish streak from termen at vein 2 to postmedial line at vein 1, defined by dark brown above and with a slight streak from it to termen below submedian fold; some dark points on middle of termen; cilia chequered red-brown and ochreous, below vein 3 dark brown with a pale line at base. Hind wing semihyaline white, the apical area and inner margin tinged with brown; a series of slight brown terminal lunules from apex to vein 2; cilia white with some brown points; the underside with the costal area slightly tinged with rufous.

Hab. Mexico, Jalapa (*Trujillo*), 2 ♂ type, Godman-Salvin Coll. *Exp.* 36 millim.

3891. Acroria diminuta. (Plate CXXIX. fig. 5.)

Xylophasia diminuta, Guen. Noct. i. p. 141 (1852).
Antachara rotundata, Wlk. xv. 1741 (1858).
Luphygma lignigera, Wlk. xxxii. 650 (1865).
Xylophasia denterna, Druce, Biol. Centr.-Am., Het. i. p. 266 (part.), nec Guen.

Head and tegulæ ochreous mixed with rufous; palpi with blackish rings at extremities of 2nd and 3rd joints; frons with brown bar; tegulæ with brown medial line; thorax whitish, the patagia tinged with rufous at base; pectus and legs ochreous tinged with rufous, the tarsi banded with brown; abdomen ochreous slightly tinged with brown. Fore wing pale ochreous tinged with rufous in parts; a brownish fascia on inner margin from near base where it narrows to a point, to termen where it expands to submedian fold, a slight black streak on it on medial area above inner margin; subbasal and antemedial lines represented by slight double brown striæ from costa; orbicular obsolete; reniform pale, somewhat quadrate, small; a brown striga from middle of costa; postmedial line double towards costa, strongly bent outwards below costa, then reduced to black points on the veins, incurved below vein 4, below vein 1 double filled in with whitish, some dark striæ beyond it from costa; an oblique rufous shade from termen below apex; a whitish subterminal line below vein 2, oblique to vein 1 and defined by red-brown before and beyond it, then excurved; some dark points on middle of termen; cilia ochreous and rufous at middle, dark brown towards apex and tornus. Hind wing semihyaline white, the costa towards apex tinged with brown; a terminal series of dark striæ; cilia white, chequered with brown from apex to vein 2; the underside with the costal area tinged with rufous and irrorated with brown.

Hab. Mexico, Atoyac (*H. H. Smith*), 1 ♀; Guatemala, Volcan d'Atitlan (*Champion*), 1 ♀; Costa Rica, Candelaria Mts. (*Underwood*), 1 ♀; Panama, Chiriqui (*Champion*), 1 ♂, 1 ♀, Godman-Salvin Coll.; Haiti (*Tweedie*), 1 ♂, 1 ♀, types *rotundata* and *lignigera*; St. Lucia (*Cowie*), 1 ♀; Dominica (*Elliott*), 1 ♂; St. Vincent (*H. H. Smith*), 1 ♂; Brazil, Pernambuco (*Ridley*), 1 ♀, Rio Janeiro (*Wilson*), 1 ♂, São Paulo (*D. Jones*), 1 ♂, 1 ♀. *Exp.* 28–34 millim.

Genus **ACRORIODES**, nov.

Type, *A. diplolopha*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching to vertex of head, the 3rd rather long; frons smooth; eyes large, round; antennæ of male laminate; thorax clothed with hair and hair-like scales, the prothorax with long spreading crest, the mesothorax with small paired crests, the metathorax with large rounded crest; tibiæ fringed with long hair; abdomen with series of dorsal crests, the basal crest very large and double. Fore wing with the apex rather produced and acute, the termen evenly curved, crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

3892. Acroriodes diplolopha.

Acroriodes diplolopha, Druce, A. M. N. H. (8) i. p. 303 (1908).

Head and thorax bright rufous mixed with some chestnut-brown; palpi and vertex of head deep chestnut-brown; tegulæ black at base and with two slight medial lines; metathoracic crest blackish; tarsi brown ringed with yellowish white; abdomen ochreous, the crests rufous, black at tips, the terminal segments with dorsal and lateral black spots. Fore wing deep rufous to postmedial line, the veins with slight pale streaks, the terminal area greyish ochreous with blackish patch on costa running obliquely from apex, with black streaks on it on the veins and in interspaces; subbasal line very faint, dentate, from costa to submedian fold, with a black point beyond it in cell; antemedial line indistinct, double, rufous filled in with ochreous, very strongly dentate, bent inwards to inner margin towards which it is defined by black on inner side and with slight black streak beyond it on the margin; claviform and orbicular absent; reniform with ochreous white annulus, narrow, constricted at middle and angled inwards on median nervure; postmedial line double, blackish filled in with greyish and with ochreous below vein 2, bent outwards below costa, then dentate and produced to black points on the veins, doubly angled inwards at discal fold and oblique

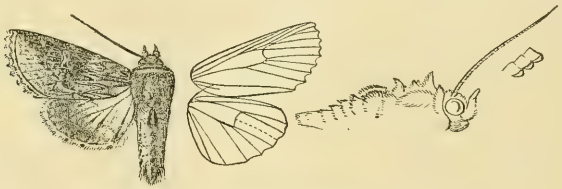


Fig. 76.—*Acroriodes diplolopha*, ♂. ½.

below vein 4, some grey points beyond it on costa; subterminal line ochreous with minute black streaks before it at middle, very minutely dentate towards costa; a fine rufous terminal line; cilia greyish mixed with rufous and with waved whitish line at middle and blackish points at tips. Hind wing yellowish white, the terminal area broadly black-brown to submedian fold, the tornal area tinged with rufous and with three small black spots towards extremity of vein 1 and on cilia; a small blackish discoidal lunule; postmedial line oblique to vein 4, then sinuous; a fine red-brown terminal line; cilia reddish ochreous with slight dark spot at extremity of vein 2; the underside yellowish white, the costal area slightly tinged with rufous and irrorated with black, the terminal area suffused with black except at tornus, a diffused dark bar from middle of costa, black discoidal spot, minutely dentate postmedial line, and terminal series of black points from apex to vein 2 defined by ochreous white lunules.

Ab. 1. Head, thorax, and basal half of fore wing with the ground-colour pale ochreous.

Ab. 2. Fore wing with black fascia above and below median nervure and sinuous black streak above vein 1 between ante- and postmedial lines.

Ab. 3. Fore wing suffused with black to subterminal line, the inner area rufous, the costal area pale ochreous to postmedial line.

Hab. Peru, Carabaya, Onconeque (*Ockenden*), 1 ♂, 1 ♀, Quinton. *Exp.* 40 millim. Type † in Coll. Druce.

Genus **PARACRORIA**, nov.

Type, *P. griseocincta.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching to about middle of frons and moderately scaled, the 3rd short; frons with large corneous prominence with raised edges; eyes large, round; antennæ of female somewhat laminate and almost simple; thorax clothed almost entirely with scales and with broad dorsal ridge of rough scales; tibiæ moderately fringed with hair; abdomen without crests. Fore wing with the apex rounded, the termen evenly curved, crenulate, the inner margin with scale-tooth at middle; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from well below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

3893. **Paracroria griseocincta.**

Xanthoptera griseocincta, Hmpsn. Ann. S. Afr. Mus. ii. p. 396 (1902).

♀. Head and thorax ochreous tinged with rufous, the latter with grey dorsal fascia, the tegulæ and patagia above edged with rufous; abdomen ochreous. Fore wing ochreous tinged with rufous, the basal area somewhat browner, the terminal area grey; subbasal line represented by a curved rufous striga from costa; antemedial line rufous, strongly excurved below costa and in submedian interspace, incurved in cell; orbicular and reniform with faint pale

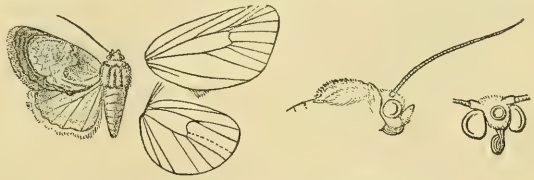


Fig. 77.—*Paracroria griseocincta*, ♀. ½.

annuli, the former minute, round, the latter constricted at middle; postmedial line indistinct, double, rufous, minutely waved and very strongly excurved, followed by a hardly waved blackish line, then by a rufous line before the grey terminal area which has traces of a very faintly waved curved brownish subterminal line on it; a fine waved black terminal line; cilia grey with a dark line near tips. Hind wing ochreous tinged with red-brown

especially on terminal area; a fine waved brown terminal line; cilia ochreous white with a few brown scales; the underside ochreous white slightly irrorated with brown, the costal area tinged with red before apex, a slight discoidal stigma and terminal series of points.

Hab. Bechuanaland, N'Gami (*Lugard*), 1 ♀ type. *Exp.* 30 millim.

Genus **THYATIRODES**, nov.

Type, *T. godalma.*

Proboscis fully developed; palpi obliquely upturned, the 2nd joint reaching about to middle of frons and moderately fringed with hair in front, the 3rd moderate, porrect; frons with large rounded prominence with short elliptical corneous process at middle with raised edges and corneous plate below it; eyes large, round; antennæ of male laminate and almost simple; thorax clothed with scales and hair mixed and with broad dorsal ridge of erect scales; tibiæ moderately fringed with hair; abdomen with some rough hair at base but without crests. Fore wing with the apex rounded, the termen evenly curved, crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base only.

3894. Thyatirodes godalma.

Thyatira godalma, Schaus, Trans. Am. Ent. Soc. xxx. p. 152 (1904).

♂. Head and thorax whitish mixed with pale rufous and on metathorax with greyish fuscous; palpi and sides of frons dark brown; pectus and legs rufous, the throat dark brown, the tarsi dark brown with pale rings; abdomen rufous, the extremity and ventral surface tinged with dark brown. Fore wing whitish; the basal area dark brown, its outer edge nearly erect from costa to vein 1, then excurved; a large diffused rounded red-brown patch

Fig. 78.—*Thyatirodes godalma*, ♂. ½.

on medial area from cell to above inner margin, conjoined to another beyond the cell between veins 7 and 3; a small dark spot on middle of costa; the outer edge of the pale medial area excurved from costa to vein 3 near termen, then incurved; the terminal area red-brown with some whitish points on costa, an oblique whitish subterminal line from costa to vein 6 and waved line from vein 3 to inner margin; a terminal series of small blackish lunules defined on inner side by a waved whitish line; cilia blackish with whitish lines at base and middle. Hind wing whitish tinged with

red-brown; an indistinct curved whitish subterminal line with some brown beyond it towards tornus; a terminal series of blackish lunules; cilia whitish mixed with brown and with brown line through them; the underside whitish tinged with red-brown, a blackish discoidal spot.

Hab. Mexico, Guadalajara (*Schaus*), 1 ♂. *Exp.* 36 millim.

Genus **STRIGIPHLEBIA**, nov.

Type, *S. flavirena.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to vertex of head and moderately fringed with hair, the 3rd moderate; frons smooth; eyes large, round; antennæ of male ciliated; thorax clothed with scales and hair mixed, the pro- and metathorax with spreading crests; tibiæ moderately fringed with hair; abdomen without crests. Fore wing with the apex somewhat produced and acute, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

3895. **Strigiphlebia flavirena**, n. sp.

Head and thorax pale ochreous yellow; palpi blackish except towards tips; metathoracic crest large, blackish; tibiæ black at base, the mid and hind tibiæ with oblique black bars at extremities and the spurs banded with black; abdomen pale ochreous dorsally suffused with fuscous brown. Fore wing pale ochreous yellow tinged with rufous except on costal area and irrorated with a few black scales, the termen deep rufous; the extremity of median nervure and veins 5, 4, 3 to subterminal line streaked with whitish and defined below by fine brown streaks; subbasal line slight, brown, from costa to submedian fold; antemedial line

Fig. 79.—*Strigiphlebia flavirena*, ♂. ½.

represented by a brown striga from costa, black points on median nervure and vein 1, and rufous and black patch on inner margin; orbicular absent; reniform yellow partly defined by bright rufous and with bright rufous streak in discal fold from it to termen; an oblique brown bar from costa to outer edge of reniform; postmedial line with black striga from costa, indistinct and very oblique to vein 7, then represented by a curved series of black points on the veins; subterminal line deep rufous and rather diffused, from apex to tornus; a fine black terminal line; cilia brown with slight pale line at base and dark line at middle. Hind wing yellowish

white tinged with brown especially on the veins and terminal area, a brown discoidal spot; cilia yellowish white with diffused brown line at middle; the underside yellowish white irrorated with brown, a black discoidal spot, faint curved postmedial line with minute black streaks on the veins, and terminal series of lunules.

Hab. S.E. Peru, Oroya (*Ockenden*), 1 ♂, 1 ♀ type, Carabaya, St. Domingo. *Exp.* 30 millim.

Genus **CENTRARTHRA**, nov.

Type, *C. furcivitta.*

Proboscis fully developed; palpi obliquely upturned, the 2nd joint reaching about to middle of frons and fringed with long hair in front, the 3rd rather long, porrect; frons smooth; eyes large, round; antennæ of female ciliated; thorax roughly clothed with hair and hair-like scales, the pro- and metathorax with slight spreading crests; fore tibiæ with curved claw at extremity on inner side, the mid and hind tibiæ moderately fringed with hair; abdomen without crests. Fore wing with the apex rounded, the termen evenly curved and crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base only.

3896. **Centrarthra furcivitta**, n. sp.

♀. Head and thorax ochreous mixed with red-brown and some fuscous; abdomen ochreous tinged with red-brown. Fore wing ochreous tinged with rufous and irrorated with dark brown and black; a black streak on basal half of median nervure obscurely forking in base of submedian fold; a faint black streak on extremity of median nervure; subbasal and antemedial lines represented by a few black scales below costa; claviform and orbicular

Fig. 80.—*Centrarthra furcivitta*, ♀. ½.

absent; reniform represented by a very slight pale lunule obscurely defined by black scales; postmedial line obsolete towards costa, very indistinct, minutely dentate and oblique from vein 6 to inner margin; faint traces of a dark subterminal line excurved at middle; a terminal series of black points. Hind wing ochreous whitish suffused and irrorated with brown, especially on terminal area; the underside whitish irrorated with brown; a dark discoidal lunule and traces of a diffused postmedial line.

Hab. Cape Colony, Deelfontein (*Sloggett*), 1 ♀ type. *Exp.* 32 millim.

Genus **MIMLEUCANIA**, nov.

Type, *M. perstriata*.

Proboscis fully developed; palpi obliquely upturned, the 2nd joint reaching to about middle of frons and moderately scaled, the 3rd short; frons smooth with ridges of hair above and between antennæ; eyes large, round; antennæ of male minutely serrate or laminate; thorax smoothly clothed with hair and hair-like scales and without crests; tibiæ moderately fringed with hair; abdomen with some rough hair at base but without crests. Fore wing with the apex rounded, the termen evenly curved and crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male minutely serrate.

3897. **Mimleucania leucosoma.**

Hadena leucosoma, Feld. Reis. Nov. pl. 109. f. 31 (1874).
Dianthœcia graminicolens, Butl. A. M. N. H. (5) ii. p. 295 (1878).

Head and thorax grey-white mixed with pale brown; palpi brown except at tips; patagia slightly edged with black-brown; front of pectus and legs brown, the tarsi slightly ringed with white; abdomen white slightly tinged with brown. Fore wing reddish brown, the costal area white tinged with brown and the veins finely streaked with brown, the inner margin whitish; a large triangular white-defined antemedial mark in submedian interspace, open towards base and partly defined by black streaks, a downcurved white streak below it above inner margin defined by

Fig. 81.—*Mimleucania leucosoma*, ♂. ½.

black streaks above and below; an oblique white fascia in submedian fold, from cell to postmedial line; orbicular minute, round, white defined by black and with brown centre; reniform oblique bar-shaped, with brownish centre and white annulus defined by black, open above, a slight white streak from it to postmedial line below vein 5; postmedial line white defined on inner side by minute dark lunules and with diffused streaks before it in the interspaces, bent outwards and obsolete below costa, oblique to vein 5, then inwardly oblique and angled inwards in submedian fold, obsolete below vein 1, some oblique white striæ beyond it from costa; the interspaces of terminal area with wedge-shaped black marks traversed by oblique white subterminal striæ from apex to

vein 3, angled outwards at vein 7 and inwards at vein 5; a terminal white band with fine dark lines just before and on termen; cilia pale brown with a fine dark line through them. Hind wing pure white, the apex faintly tinged with brown, the veins brown; a slight dark discoidal lunule; the underside with the costal and terminal areas to vein 2 irrorated with brown, a black discoidal lunule and curved postmedial line from costa to submedian fold.

Hab. Transvaal, White R. (*Cooke*), 1 ♂; Natal, Mooi R., 1 ♂; Madagascar, Betsileo (*Cowan*), 2 ♂, 1 ♀ type *graminicolens*. *Exp.* 34–38 millim.

Sect. II. Antennæ of male laminate.

3898. **Mimleucania perstriata**, n. sp.

Head and thorax grey-white tinged with brown; palpi blackish; frons with black bars above and between antennæ; tegulæ with black line near base and dark brown tips; patagia with dark streak on outer edge and some black scales above; vertex of thorax with black streak; tibiæ and tarsi with dark streaks; abdomen whitish tinged with brown except at base and with blackish dorsal streak on basal segments. Fore wing whitish thickly irrorated with brown and with a diffused brown fascia below the cell and thence obliquely to termen below apex, defined by pure white above; a strong black streak below basal half of cell; the veins with dark streaks; antemedial line obsolete on costal half, then slight, extremely strongly angled outwards in submedian fold and above inner margin and inwards on vein 1; faint traces of a very oblique orbicular stigma; reniform represented by slight black striæ at

Fig. 82.—*Mimleucania perstriata*, ♂. ½.

sides and a black streak with white streak above it below end of cell; postmedial line hardly traceable on costal half, more distinct below vein 3, bent outwards below costa, oblique below vein 4 and slightly angled inwards in submedian fold; slight wedge-shaped brown marks from termen above veins 7 and 3 and a stronger mark on vein 2, with black streaks above and below vein 2; the extremity of the veins defined by wedge-shaped white marks intersecting the brown cilia; a terminal series of slight black lunules. Hind wing white, the veins of terminal half and the terminal area from apex to vein 2 tinged with fuscous; the underside with the costal area and terminal area to vein 2 irrorated with fuscous.

Hab. Orange River Colony, Bloemfontein (*H. F. Wilson*), 3 ♂, 1 ♀. *Exp.* 32–36 millim.

Genus **RHABINOPTERYX.**

Type.
Rhabinopteryx, Christ. Rom. Mém. v. p. 32 (1889) ..... *turanica.*

Proboscis fully developed; palpi obliquely upturned, reaching about to middle of frons and moderately fringed with scales in front, the 3rd joint short; frons with rounded prominence with large corneous plate below it; eyes large, round; antennæ of male almost simple, with tuft of long hair from basal joint in front; thorax clothed chiefly with scales, the prothorax without crest, the metathorax with spreading crest; build slender; tibiæ slightly fringed with hair; abdomen without crests. Fore wing long and narrow, the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 and 10 anastomosing with 8 to form the areole: 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base only.

A. Fore wing with the reniform present ..... *turanica.*
B. Fore wing with the reniform absent ..... *subtilis.*

3899. **Rhabinopteryx turanica.**

Ligia turanica, Ersch. Fedtsch. Reise, p. 67, pl. 4. f. 69 (1874); Christ. Rom. Mém. v. p. 34, pl. 2. f. 6; Staud. Cat. Lep. pal. p. 242.

♂. Head and thorax white mixed with pale red-brown and some blackish scales; basal joint of antennæ with some black scales; tegulæ with two brown lines near base and one near tips; tarsi brownish ringed with white; abdomen white slightly tinged with brown. Fore wing white tinged with pale brown; a white fascia in basal half of submedian fold with a fine brown streak in the fold with some blackish at extremity; subbasal line represented by two slight black points below costa, the antemedial line by two black points on costa and two on vein 1; a white fascia in middle

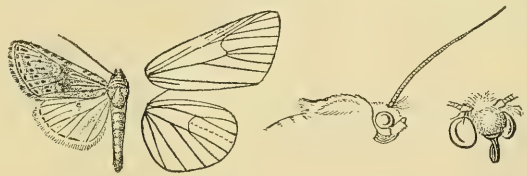


Fig. 83.—*Rhabinopteryx turanica*, ♂. ½.

of cell with fine brown streak in the fold, some blackish beyond it before the reniform, which is small, white, with brown line in centre; postmedial line represented by a double series of black points, bent outwards and almost obsolete below costa, excurved to vein 4, then strongly incurved, some small white spots beyond it on costa; subterminal line represented by an oblique curved series of white marks in the interspaces with small black spots in their centres and slight fuscous marks on their outer edges; a series of small black spots just before termen on white marks; cilia white with fuscous striæ at base, fuscous line at middle, the tips chequered white and brownish with series of small black spots. Hind wing

white faintly tinged with brown especially on the veins; a fine dark terminal line; the underside with the costa slightly irrorated with brown, a slight brown discoidal lunule.

Hab. W. Turkestan, Turcomania, Ferghana, Issyk Kul; E. Turkestan, Ili, Kuldja, 1 ♂. *Exp.* 32 millim.

3900. Rhabinopteryx subtilis.

Epimecia subtilis, Mab. Bull. Soc. Ent. Fr. 1888, p. 51; id. Nov. Lep. p. 66, pl. 11. f. 4; Staud. Cat. Lep. pal. p. 242.

Head and thorax white mixed with pale brown and black scales; frons with fuscous bar above; tegulæ with fine black line near base; tarsi fuscous ringed with white; abdomen white tinged with brown. Fore wing white tinged with brown and slightly irrorated with fuscous, the costa irrorated with some black scales; subbasal line represented by a point of black scales on costa, the antemedial line by double points of black scales on costa and vein 1; a white fascia in basal half of submedian fold with fine brown streak in the fold, some black scales at its extremity; a whitish streak in terminal half of cell; postmedial line represented by a double series of faint black points, bent outwards below costa, excurved to vein 4, then strongly incurved, some small white spots with fuscous between them beyond it on costa; subterminal line obliquely curved, whitish with blackish points on its outer edge: a terminal series of black striæ with white striæ before them; cilia white mixed with blackish, with fine black line at middle followed by a white line. Hind wing white tinged with brown; a terminal series of fuscous striæ; cilia white; the underside irrorated with brown.

Hab. Algeria, Biskra (*Walsingham*), 1 ♂, 4 ♀. *Exp.* 30–32 millim.

Genus EPIMECIA.

Type.

Epimecia, Guen. Ann. Soc. Ent. Fr. 1839, p. 514 ..... *ustula*.

Proboscis fully developed; palpi porrect, extending about the length of head and rather broadly fringed with hair below; frons smooth, with ridge of hair; eyes large, round: antennæ of male somewhat laminate and almost simple; thorax clothed chiefly with scales, the tegulæ produced to a slight hood behind, the prothorax without crest, the metathorax with spreading crest; build slender; tibiæ moderately fringed with hair; abdomen without crests. Fore wing rather narrow, the apex rounded, the termen obliquely curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 stalked; 8 anastomosing with the cell to middle.

3901. Epimecia ustula.

Cymatophora ustula, Frr. Neue Beitr. ii. p. 90, pl. 148. f. 1 (1835); Staud. Cat. Lep. pal. p. 212.

Caradrina lurida, Treit. Eur. Schmett., Suppl. x. 2, p. 81 (1835); Herr.-Schäff. Eur. Schmett. ii. p. 239, Noct. f. 442.

Noctua ustulata, Geyer, Eur. Schmett., Noct. f. 857 (1841); Dup. Lép. Fr., Suppl. iii. p. 395, pl. 35. f. 7; Boisd. Rambr. & Grasl. Coll. Icon, Chen., Noct. pl. 22. ff. 1–4.

Head and thorax white mixed with reddish brown; palpi and frons more rufous; tegulæ with two brown lines near base and one at middle; pectus and legs white, the pectus in front and fore legs tinged with rufous; abdomen white with rufous dorsal bands. Fore wing white tinged with brown and with rufous on terminal area and slightly irrorated with black especially on the veins; a white fascia in base of cell met by an oblique pale shade from apex through upper part of cell; antemedial line represented by slight double fuscous striæ from costa and points on median nervure and vein 1; slight white marks in cell above origin of vein 2 and at lower angle; postmedial line represented by a slight fuscous striga from costa,

Fig. 84.—*Epimecia ustula*, ♂. ½.

then by black points on the veins, bent outwards below costa and incurved below vein 4, some white spots beyond it on costa; subterminal line represented by a series of small rufous marks in the interspaces defined on inner side by slight white marks and oblique from apex to vein 2, then by some whitish suffusion in submedian interspace; cilia rufous at base with slight brownish medial line and rufous and whitish tips. Hind wing white, the veins slightly tinged with brown; a fine rufous terminal line; cilia with faint rufous line near base; the underside with the costal area slightly irrorated with brown.

Hab. France, Sand Coll.; Austria, Tyrol, Leech Coll.; Hungary; Spain, Catalonia, Frey Coll.; Dalmatia, Leech Coll.; Bulgaria; S. Russia, Sarepta (*Christoph*); ? W. Siberia, Altai. *Exp.* 28–32 millim.

Larva. Kirby, Butt. & Moths Eur. p. 252; Hffmn. Raup. p. 124, pl. 33. f. 4.

Green with yellowish-white stripes on the back and sides. Food-plant: *Scabiosa leucantha*. 5–6 and 8; forming a thick cocoon like parchment.

Genus **FERGANA**.

	Type.
Fergana, Staud. Iris, v. p. 166 (1892)	*oreophila*.

Proboscis fully developed; palpi porrect, hardly reaching beyond frons which is smooth; eyes large, round; antennæ of male ciliated; thorax clothed chiefly with scales, the prothorax without crest, the metathorax with spreading crest; build very slender; tibiæ smoothly scaled; abdomen without crests. Fore wing long and narrow, the apex rounded, the termen obliquely curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle;

9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell to near middle.

3902. **Fergana oreophila.**

Fergana oreophila, Staud. Iris, v. p. 166, pl. 2. f. 9 (1892); id. Cat. Lep. pal. p. 194.

♂. Head and thorax pale red-brown mixed with whitish; tegulæ edged with whitish; tarsi ringed with whitish; abdomen ochreous whitish. Fore wing ochreous whitish suffused with pale red-brown, the costal area ochreous whitish from middle widening to subterminal line; antemedial line indistinct, oblique from costa to submedian fold, then obliquely incurved; orbicular and reniform with whitish annuli, the former very narrow and oblique elliptical, the latter angled inwards at middle and with its upper extremity

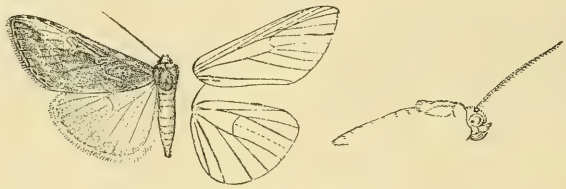


Fig. 85.—*Fergana oreophila*, ♂. ½.

produced; postmedial line indistinct, whitish, strongly bent outwards below costa, then minutely waved, very oblique below vein 4 and excurved at vein 1, some pale points beyond it on costa; subterminal line whitish, arising from below apex, oblique, dentate at veins 4, 3, 2 and angled inwards at submedian fold; a terminal series of blackish striæ defined on inner side by whitish. Hind wing whitish tinged with red-brown except on inner area; cilia white at tips; the underside whitish tinged with red-brown.

Hab. W. Turkestan, Turcomania, 2 ♂, Ferghana, Sarawschan. *Exp.* 42 millim.

Genus **STILBIA.**

Type.
Stilbia, Steph. Ill. Brit. Ent., Haust. iii. p. 124 (1829) ..... *anomala.*

Proboscis fully developed; palpi porrect, hardly reaching beyond the frons; frons smooth; eyes large, round; antennæ of male ciliated; thorax clothed almost entirely with scales, the prothorax without crest, the metathorax with spreading crest; build slender; tibiæ smoothly scaled; abdomen without crests. Fore wing long and narrow, the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anatomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell to near middle.

A. Fore wing of male with black patch between orbicular and reniform ..... *faillæ.*
B. Fore wing of male with diffused black streak between orbicular and reniform ..... *anomala.*

3903. Stilbia faillæ.

Stilbia anomala, Failla-Ted. Nat. Sicil. x. p. 29, pl. 1. f. 3 (nec Haw.).
Stilbia faillæ, Püng. Nat. Sicil. xi. p. 18 (1891); Staud. Cat. Lep. pal. p. 194.
Stilbia sicula, Staud. Iris, iv. p. 289 (1892).

♂. Head and thorax fuscous brown with a greyish tinge; palpi and frons fuscous; tarsi fuscous with slight pale rings; abdomen grey tinged with brown. Fore wing glossy grey suffused with brown and irrorated with fuscous; subbasal line indistinct, dark, waved, from costa to vein 1; antemedial line indistinct, double, blackish, angled outwards below costa, excurved and almost obsolete below submedian fold; orbicular and reniform defined by black and white at sides only, the former rather triangular, the cell between them black; postmedial line indistinct, double, blackish filled in with whitish, bent outwards below costa, oblique to vein 5, then incurved and excurved below submedian fold; subterminal line faintly defined by fuscous on inner side, slightly excurved below costa and at middle; a terminal series of slight dark striæ; cilia brownish white. Hind wing glossy greyish suffused with brown; cilia brownish white; the underside with indistinct curved postmedial line.

Hab. Sicily, 1 ♂. *Exp.* 30 millim.

3904. Stilbia anomala.

Phytometra anomala, Haw. Trans. Ent. Soc. i. p. 336 (1812); Staud. Cat. Lep. pal. p. 194.
Geometra hybridata, Hübn. Eur. Schmett., Geom. ff. 497, 498 (1822).
Curadrina stagnicola, Treit. Eur Schmett. v. (2) p. 258 (1825); Dup. Lép. Fr., Suppl. iii. p. 580, pl. 48. f. 5.
Stilbia anomalata, Steph. Ill. Brit. Ent., Haust. iii. p. 125 (1829); Curt. Brit. Ent. pl. 631.
Stilbia philopalis, Grasl. Ann. Soc. Ent. Fr. 1852, p. 413, pl. 8. i. f. 3.
Stilbia andalusica, Staud. Iris, iv. p. 290 (1892).
Stilbia syriaca, Staud. Iris, iv. p. 290 (1892).
Caradrina calberlæ, Failla-Ted. Nat. Sicil. x. p. 29, pl. 1. f. 4 (1890); Staud. Cat. Lep. pal. p. 195.
Stilbia insularis, Fuchs, Soc. Ent. xviii. p. 9 (1903).

♂. Head and thorax fuscous brown with patches of grey on patagia; tarsi with slight pale rings; abdomen brownish ochreous.

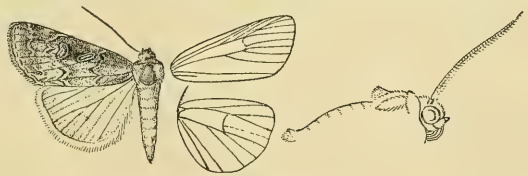


Fig. 86.—*Stilbia anomala*, ♂. ½.

Fore wing grey irrorated with brown, the costal and terminal areas broadly suffused with fuscous brown; antemedial line double, the

inner line indistinct, angled outwards below costa and in submedian fold and incurved at vein 1; orbicular and reniform grey-white defined by black-brown, their centres defined by brown, the former narrow and very oblique elliptical, the latter with more or less diffused black streak before it; medial line indistinct, diffused, sinuous, from lower angle of cell to inner margin; postmedial line double filled in with grey-white, indistinct except the inner line from vein 2 to inner margin, bent outwards below costa, excurved and minutely waved to vein 4, then incurved and angled outwards at vein 1; subterminal line indistinct, grey, waved, with slight black streaks before it above and below vein 7; a fine waved dark terminal line; cilia with a slight dark line through them. Hind wing whitish tinged with red-brown especially on terminal area from costa to vein 2; a fine dark terminal line from apex to vein 2; the underside white, the costal area irrorated with brown.

♀. Head, thorax, and fore wing nearly uniform fuscous brown, the last with the markings indistinct.

Ab. 1. *philopalis*. Smaller and paler; fore wing with the markings more prominent.—S.E. France.

Ab. 2. *andalusica*. Small; fore wing with the markings indistinct.—Andalusia.

Ab. 3. *syriaca*. Wings broader; hind wing darker.—Syria.

Hab. Britain, England (*Barrett*), Leech Coll., Ireland, Derry (*Salvage*); France, Frey Coll.; Germany, Zeller & Leech Colls.; Spain, Andalusia; Sicily; Syria. *Exp.* 30–38 millim.

Larva. Meyr. Brit. Lep. p. 125; Barrett, Lep. Brit. v. p. 277, pl. 220. f. 2.

Green or pale brown; dorsal and subdorsal lines white or yellowish, dark-edged; head brown or greenish freckled with dark brown. Food-plant: Grasses. 9–3.

Genus **PRÆSTILBIA**.

	Type.
Præstilbia, Staud. Iris, iv. p. 288 (1891)	*armeniaca*.

Proboscis fully developed; palpi porrect, hardly extending beyond the frons which is smooth; eyes large, round; antennæ of male serrate; thorax clothed chiefly with scales, the prothorax without crest, the metathorax with spreading crest; build slender; tibiæ smoothly scaled; abdomen without crests. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 shortly stalked; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell to near middle.

3905. Præstilbia armeniaca.

Præstilbia armeniaca, Staud. Iris, iv. p. 288, pl. 3. f. 10 (1891); id. Cat. Lep. pal. p. 194.

♂. Head and thorax whitish tinged with red-brown; tarsi brown tinged with whitish; abdomen whitish. Fore wing whitish tinged with pale red-brown; subbasal line represented by a small black spot below costa with a black point beyond it in cell; ante-

medial line indistinct, whitish, with a minute wedge-shaped black spot before it from costa and a black bar on its outer edge in submedian interspace representing the claviform; orbicular and reniform large, pale, with whitish annuli at sides, the former round with a quadrate black spot on its inner edge confluent with the antemedial line and a V-shaped black spot between them, the latter

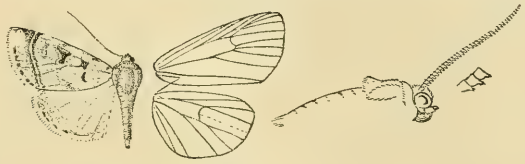


Fig. 87.—*Præstilbia armeniaca*, ♂. ½.

defined by dark scales on outer side; an indistinct diffused curved medial brown line; postmedial line unusually near termen, double, dark, slightly excurved at middle, and oblique below vein 4, a wedge-shaped brown shade on its outer edge from costa to vein 5; subterminal line absent; a terminal series of small black lunules. Hind wing whitish, the terminal area tinged with brown from apex to submedian fold; a terminal series of slight dark points; the underside whitish.

Hab. Hungary; Greece; Asia Minor, Pontus, 1 ♂. *Exp.* 32 millim.

Genus **HYPOSTILBIA**, nov.

Type, *H. megastigma*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching to vertex of head and fringed with scales in front, the 3rd moderate; frons smooth; eyes large, rounded; antennæ of male ciliated; build slender; head and thorax clothed with scales; the prothorax with spreading crest; the metathorax without crest; tibiæ moderately fringed with hair; abdomen elongate, slender, without crests. Fore wing elongate, rather narrow, the termen evenly rounded; veins 3 and 5 from near angle of cell; the areole rather large, vein 6 from it; 9 from 10 anastomosing with 8; 11 from cell. Hind wing with veins 3, 4 and 6, 7 rather strongly stalked; 5 obsolescent from middle of discocellulars; 8 rather strongly anastomosing with cell.

A. Fore wing with the orbicular and reniform fuscous defined by whitish points ..... *megastigma*.
B. Fore wing with the orbicular absent, the reniform a faint whitish lunule ..... *correpta*.

3906. Hypostilbia megastigma.

Senta megastigma, Püng. Iris, xix. p. 221, pl. vii. f. 18 (1906).

♂. Head, thorax, and abdomen pale grey mixed with reddish brown; palpi and legs ochreous white irrorated with fuscous. Fore wing ochreous white irrorated with fuscous, the veins and terminal area slightly darker; slight antemedial dark marks on costa, in cell, and on inner margin; orbicular and reniform fuscous

brown defined by white points, the former rather oblique quadrate, the latter constricted at middle; a postmedial series of faint double black points on the veins with more prominent spot at costa, excurved to vein 4, then oblique, some blackish points beyond it on costa; subterminal line obsolete; a terminal series of black points

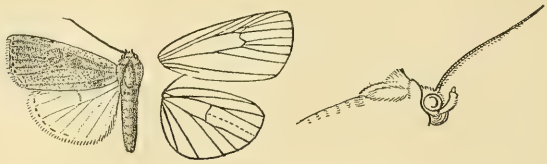


Fig. 88.—*Hypostilbia megastigma*, ♂. ½.

with whitish points on their inner side; a slight dark line near base of cilia. Hind wing white with faint ochreous tinge; a faint oblique discoidal stigma and terminal series of striæ from apex to submedian fold; the underside with the costal and terminal areas irrorated with black, a blackish discoidal spot.

Hab. E. Turkestan, Lob-nor, 1 ♂ cotype. *Exp.* 36 millim.

*3907. **Hypostilbia correpta.** (Plate CXXIX. fig. 6.)

Senta correpta, Püng. Iris, xix. p. 221, pl. viii. f. 2 (1906).

♂. Head and thorax white tinged with leaden grey; palpi except at tips and antennæ black; thorax dark leaden grey; abdomen whitish suffused with fuscous brown. Fore wing dark leaden grey with a silvery gloss; subbasal line absent; antemedial line very indistinct, diffused, curved; claviform and orbicular absent; reniform a faint whitish lunule; very indistinct diffused, curved medial and postmedial lines, the latter somewhat dentate; subterminal line formed by faint whitish marks slightly defined on inner side by dark suffusion, slightly angled outwards at vein 7, excurved at middle and bent outwards to tornus; a terminal series of minute blackish striæ with slight whitish marks before them. Hind wing uniform pale brownish white with fine brown terminal line; cilia white tinged with brown; the underside with slight white irroration on costal area, the apical area suffused with fuscous, a slight discoidal bar.

Hab. E. Turkestan, Urumtschi, type † ♂ in Coll. Püngeler. *Exp.* 36 millim.

Genus **AMPHIDRINA.**

Type.

Amphidrina, Staud. Iris, iv. p. 293 (1892) ..... *agrótina.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and moderately scaled, the 3rd short, porrect; frons smooth; eyes large, round; antennæ of male typically ciliated; thorax clothed chiefly with scales, the pro- and metathorax with spreading crests; tibiæ moderately fringed with hair; abdomen with some rough hair at base but without crests. Fore wing with the apex rounded, the termen evenly curved and crenulate;

veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male bipectinate with short branches.

3908. **Amphidrina pexicera**, n. sp.

♂. Head and thorax dark red-brown mixed with some grey; palpi dark brown, pale at tips; tarsi fuscous with pale rings; abdomen grey mixed with brown. Fore wing grey-white suffused in parts with pale rufous and irrorated with fuscous brown; subbasal line black defined by whitish on outer side, waved, from costa to submedian fold; antemedial line double filled in with whitish, oblique, waved; a slight dark mark at middle of submedian fold;

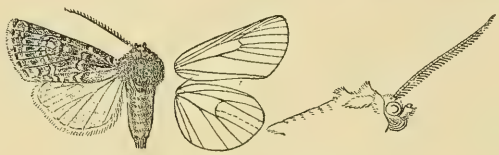


Fig. 89.—*Amphidrina pexicera*, ♂. $\frac{1}{1}$.

orbicular a small rather elongate black-brown spot; reniform small, defined by black, more strongly on inner side; postmedial line double filled in with white, strongly bent outwards below costa, then very minutely waved, incurved below vein 4 and slightly excurved above inner margin, some white points beyond it on costa; subterminal line whitish defined on inner side by small dentate brown marks from below costa to vein 2, excurved below vein 7 and at middle; a terminal series of black lunules. Hind wing whitish suffused with brown; a fine dark terminal line; cilia ochreous white; the underside white tinged with ochreous, the costal and terminal areas irrorated with brown, a small dark discoidal spot and sinuous postmedial line.

Hab. Cape Colony, Hoot Bay (*W. L. Sclater*), 1 ♂ type. *Exp.* 36 millim.

Sect. II. Antennæ of male ciliated.

A. Fore wing with the reniform very large and strongly angled inwards on median nervure ..... *amurensis.*
B. Fore wing with the reniform not angled inwards on median nervure.
  a. Fore wing with strong black medial shade.
    a^1. Fore wing with white band on basal half of medial area ..... *glaucistis.*
    b^1. Fore wing without white band on basal half of medial area.
      a^2. Hind wing white, the termen narrowly brown ..... *intaminata.*
      b^2. Hind wing wholly suffused with brown ..... *spælotidia.*
  b. Fore wing without black medial shade ..... *agrotina.*

3909. Amphidrina amurensis.

Dryobota amurensis, Staud. Rom. Mém. vi. p. 432, pl. 7. f. 5 (1892); id. Cat. Lep. pal. p. 182.

♂. Head and thorax whitish mixed with brown and fuscous; tegulæ and patagia edged with black; abdomen ochreous white irrorated with fuscous. Fore wing grey-white slightly tinged with reddish brown and thickly irrorated with black; traces of a black streak below base of cell; subbasal line represented by a black striga from costa; antemedial line indistinct, double, waved; claviform large, defined by black; orbicular and reniform defined by black, except above, and with brownish centres, the former somewhat oblique elliptical, the latter with large lobe towards base on and below median nervure; postmedial line rather indistinct, strongly bent outwards below costa, then waved, incurved at discal fold and very oblique below vein 4, some white points beyond it on costa; subterminal line whitish defined by fuscous on inner side except at middle and with slight black streaks before it below veins 7, 5, 2, excurved below vein 7 and at middle and angled inwards at discal and submedian folds; a terminal series of small black lunules. Hind wing whitish, suffused and irrorated with brown except on costal area, the terminal area rather darker; cilia white; the underside silvery white, the costal area slightly irrorated with brown.

Hab. Mongolia, Changhai Mts., 1 ♂; E. Siberia, Ussuri. *Exp.* 40 millim.

3910. Amphidrina glaucistis. (Plate CXXIX. fig. 7.)

Caradrina glaucistis, Hmpsn. Ann. S. Afr. Mus. ii. p. 443 (1902).

Head and thorax white, the vertex of head and thorax except base of tegulæ tinged with fuscous brown; palpi black, white at tips; antennæ black; tegulæ with black streaks on outer edge; metathoracic crest black; tibiæ banded with black, the tarsi black ringed with white; abdomen white, dorsally suffused with fuscous leaving slight white segmental lines. Fore wing with the basal half white irrorated with a few black scales, the terminal half black; a black point at base of costa; subbasal line black, excurved below costa and ending at submedian fold; the antemedial area with diffused sinuous black band emitting a streak on outer side in submedian fold, sometimes crossing the antemedial line, which is black, oblique, waved, expanding into a spot on costa; the inner edge of black area oblique and angled outwards on median nervure and vein 1; orbicular absent; reniform a slight white lunule defined by black; postmedial line black, defined by white on outer side, very slightly on inner area, and with some white before it beyond the reniform, bent outwards below costa, angled inwards at discal fold and incurved below vein 4, some white points beyond it on costa; subterminal line represented by a white striga from costa, then by a few white scales; a terminal series of black striæ;

cilia white with series of fuscous spots at base and diffused fuscous line at middle. Hind wing white, the veins tinged with brown, the terminal area suffused with brown from apex to vein 2; the underside with black discoidal spot, postmedial series of minute streaks on the veins, some fuscous irroration at apex, and terminal series of small black lunules from apex to vein 2.

Ab. 1. The type; fore wing with the antemedial black band and the black on terminal half reduced to fuscous suffusion, the medial and subterminal lines well defined.

Hab. Transvaal (*Cholmley*), 2 ♂, 5 ♀, Johannesburg (*Cooke*), 1 ♀; Natal (*Mrs. Blakeway*), 1 ♀; Basutoland, Maseru (*Crawshay*), 1 ♂ type; Cape Colony, Kokstad (*Mrs. Pringle*), 1 ♂. *Exp.* 26–32 millim.

3911. Amphidrina intaminata.

Agrotis intaminata, Wlk. xxxii. 698 (1868); Hmpsn. Ill. Het. B.M. viii. p. 15, pl. 143. f. 5; id. Moths Ind. ii. p. 261.

Head and thorax grey mixed with brown, the patagia and vertex of thorax with some black scales; palpi fuscous, the 2nd joint white in front and at tip; lower part of frons white; antennæ fuscous, the basal half ringed with white; tarsi black ringed with white; abdomen grey suffused with fuscous, the ventral surface white with the anal segment brown. Fore wing grey tinged with brown and irrorated with black; subbasal line strong, black, from costa to submedian fold, a blackish patch beyond it on costa and a point in cell; antemedial line indistinctly double, oblique, sinuous, with black point on the outer line at costa; orbicular a small black spot; reniform a black lunule obscured by the strong black medial shade which is oblique from costa to lower angle of cell, then angled inwards in submedian fold; postmedial line rather indistinct, double, bent outwards below costa, then minutely dentate, oblique below vein 4, some white points beyond it on costa with black streaks between them; subterminal line indistinct, whitish, slightly defined by fuscous on inner side and with diffused black patch before it on costal area, oblique towards costa, slightly angled outwards at vein 7, then minutely waved; a terminal series of black lunules. Hind wing white, the veins of terminal half and termen tinged with brown; cilia brown at tips towards apex; the underside with small dark discoidal spot and spot above it on costa, the apex tinged with brown.

Hab. Madras, Nilgiris (*Lindsay*, *Hampson*), 2 ♀, Coimbatore (*Walhouse*), 1 ♂ type. *Exp.* 32–36 millim.

3912. Amphidrina spælotidia. (Plate CXXIX. fig. 8.)

Caradrina spælotidia, Butl. A. M. N. H. (5) iv. p. 243 (1879).

♀. Head and thorax grey tinged with brown and mixed with fuscous; palpi with the 2nd joint blackish at the sides; tibiæ banded with black; the tarsi black with pale rings; abdomen grey

suffused with fuscous, ventrally whitish irrorated with fuscous. Fore wing greyish tinged with ochreous and irrorated with fuscous; subbasal line strong, black, from costa to submedian fold; antemedial line blackish, rather diffused, angled outwards in cell and on vein 1; orbicular and reniform absent; a diffused black medial shade, oblique from costa to lower angle of cell, then approximated to the postmedial line, which is blackish, bent outwards below costa, then dentate and produced to points on the veins, incurved below vein 4, some pale points with black streaks between them beyond it on costa; subterminal line indistinct, pale, defined on inner side by fuscous suffusion and with fuscous patches before it at costa and discal fold, excurved below vein 7 and at middle, incurved at discal fold and bent outwards to tornus, some fuscous suffusion beyond it at discal fold; a terminal series of black lunules. Hind wing whitish suffused with ochreous brown, the basal area rather paler; cilia yellowish white slightly mixed with brown; the underside whitish tinged with ochreous and irrorated with brown, a brown discoidal spot, diffused curved postmedial line from costa to vein 2, and dark terminal line.

Hab. Madagascar, Fianarantsoa (*Shaw*), 1 ♀ type. *Exp.* 32 millim.

3913. Amphidrina agrotina.

Amphidrina agrotina, Staud. Iris, iv. p. 293, pl. 3. f. 11 (1892); id. Cat. Lep. pal. p. 195.
Amphidrina jordana, Staud. Iris, vii. p. 278 (1894).

♂. Head and thorax ochreous white slightly tinged with rufous; palpi pale rufous, white in front and fuscous behind; pectus and fore legs more strongly tinged with rufous; abdomen white tinged with ochreous. Fore wing ochreous white slightly tinged and irrorated with reddish brown; subbasal line represented by slight dark points below costa and cell; antemedial line very indistinct and interrupted, oblique, waved, with small dark spots below costa

Fig. 90.—*Amphidrina agrotina*, ♂. ½.

and cell; claviform absent; orbicular represented by a faint dark point; reniform diffused, blackish, constricted at middle, a faint diffused dark medial shade; postmedial line very indistinct, minutely waved, obsolete towards costa, excurved to vein 4, then incurved; subterminal line only defined by a dark shade on its inner side, bent inwards at vein 6, excurved and somewhat dentate at middle and bent outwards to tornus; the terminal area whiter; a terminal series of slight dark points; cilia yellowish white. Hind wing

pure white; the underside with the costa slightly tinged with ochreous.

Ab. 1. *jordana*. Fore wing with the ante- and postmedial lines strong, black with prominent spots at costa, the reniform almost obsolete.—Palestine.

Hab. Armenia, 1 ♂; Asia Minor, Pontus; Palestine, 1 ♂. *Exp.* 38 millim.

Genus **ATHETIS**.

	Type.
Athetis, Hübn. Verz. p. 209 (1827)	*furvula.*
Atypha, Hübn. Verz. p. 213 (1827)	*pulmonaris.*
Elaphria, Hübn. Verz. p. 230 (1827)	*morpheus.*
Hapalotis, Hübn. Verz. p. 254 (1827)	*furvula.*
Nebrissa, Wlk. Journ. Linn. Soc., Zool. vi. p. 194 (1862)	*bimacula.*
Anorthodes, Smith, Trans. Am. Ent. Soc. xviii. p. 114 (1891)	*tarda.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to vertex of head and moderately fringed with scales in front, the 3rd short; frons smooth; eyes large, round; antennæ of male typically ciliated; thorax clothed with hair and hair-like scales mixed with some scales, the prothorax with small spreading crest, the metathorax without distinct crest; tibiæ moderately fringed with hair; abdomen without crests. Fore wing rather narrow, the costa and inner margin subparallel, the apex rounded, the termen evenly curved and slightly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell: 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male bipectinate with moderate branches, the apex serrate.

A. Fore wing fuscous black mixed with grey, the lines distinct, black ..... *chionopis.*
B. Fore wing cupreous brown, the lines indistinct ..... *albipuncta.*

3914. **Athetis chionopis**, n. n.

Caradrina leucopis, Hmpsn. Ann. S. Afr. Mus. ii. p. 443 (1902), nec p. 293.

Head and thorax black-brown mixed with some grey, the thorax with a metallic gloss; abdomen grey tinged with fuscous, the ventral surface blackish. Fore wing fuscous black mixed with greyish; subbasal line represented by slight double black striæ from costa

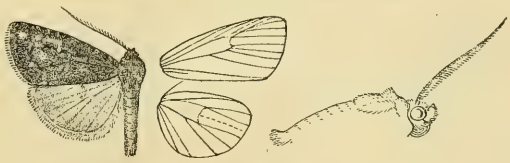


Fig. 91.—*Athetis chionopis*, ♂. ½.

filled in with greyish; antemedial line black defined by greyish on inner side, rather oblique, waved; orbicular a small rather elongate black spot; reniform a small black spot with pure white bar on its outer edge; traces of a sinuous medial dark line; postmedial line

black defined by greyish on outer side, strongly bent outwards below costa, then minutely dentate and strongly incurved below vein 4, some white points beyond it on costa; subterminal line slight, greyish, defined on inner side by black suffusion, minutely waved, angled outwards at vein 7 and excurved at middle; a lunulate black terminal line; cilia greyish fuscous with a black line near base. Hind wing white tinged with brown especially on terminal area; cilia whitish with a fuscous line near base; the underside whitish, the costal and terminal areas suffused and irrorated with fuscous, a small discoidal spot and curved postmedial line from costa to vein 4.

Hab. Basutoland, Machaka (*Crawshay*), 5 ♂, 1 ♀ type. *Exp.* 34 millim.

3915. Athetis albipuncta. (Plate CXXIX. fig. 9.)

Sesamia albipuncta, Hmpsn. Ann. S. Afr. Mus. ii. p. 297 (1902).

♂. Head, thorax, and abdomen greyish suffused with dark brown; palpi with the 2nd joint blackish behind, fore legs blackish above. Fore wing cupreous brown; traces of a curved antemedial line from cell to inner margin; a white discoidal spot with short blackish streak before and beyond it in discal fold; traces of a curved postmedial line. Hind wing greyish suffused with brown with a slight reddish tinge; the underside paler irrorated with dark brown, the apical area suffused with fuscous, a dark discoidal lunule and diffused curved postmedial line.

Hab. C. Colony, Transkei (*Miss F. Barrett*), 1 ♂ type. *Exp.* 30 millim.

Sect. II. Antennæ of male bipectinate with very short branches, the apex serrate.

3916. Athetis cæca.

Charidea cæca, Hmpsn. Ann. S. Afr. Mus. ii. p. 442 (1902).

♂. Head and thorax grey mixed with fuscous brown; palpi and frons black-brown, the former with pale ring at extremity of 2nd joint; abdomen grey tinged with brown, ventrally blackish irrorated

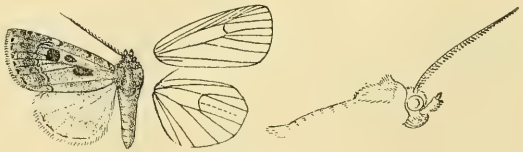


Fig. 92.—*Athetis cæca*, ♂. ½.

with grey. Fore wing grey suffused and thickly irrorated with brown; subbasal line represented by slight double black striæ from costa; antemedial line slight, black, bent inwards in cell, then sinuous; claviform an elongate black patch; orbicular and reniform

black, the former elongate elliptical, the latter irregularly rounded; postmedial line slight, black, with more prominent spot at costa, bent outwards below costa, then minutely dentate, slightly incurved at discal fold, incurved below vein 4 and angled outwards on vein 1, some whitish and black striæ beyond it on costa; subterminal line defined by brown suffusion on inner side, excurved below vein 7 and at middle and angled inwards at discal and submedian folds; a terminal series of slight black lunules. Hind wing grey suffused with fuscous brown; cilia brownish at base, white at tips; the underside whitish tinged and irrorated with brown, the costal area darker, a small discoidal spot and indistinct postmedial line excurved to vein 4, then oblique.

Hab. Natal, Charleston, 1 ♂ type; Cape Colony, Strydfontein (*Moxham*), 1 ♂. *Exp.* 34 millim.

Sect. III. Antennæ of male serrate.

A. Fore wing with yellow discoidal bar placed on a black spot ..... *melanopis.*
B. Fore wing with white discoidal spot placed on a black streak ..... *leucopis.*
C. Fore wing with white discoidal point on an ill-defined fuscous spot ..... *nephrosticta.*
D. Fore wing without white or yellow discoidal mark.
a. Fore wing with white annulus to reniform.
*a*¹. Fore wing with black centre to reniform ..... *capicola.*
*b*¹. Fore wing with rufous centre to reniform ..... *rufipuncta.*
b. Fore wing without white annulus to reniform.
*a*¹. Fore wing with the reniform defined by white points ..... *poliostrota.*
*b*¹. Fore wing with the reniform not defined by white points.
*a*². Fore wing with the reniform defined by black ... *microtera.*
*b*². Fore wing with the reniform rather darker than the ground-colour and undefined.
*a*³. Fore wing with the subterminal line faintly defined by fuscous on inner side.
*a*⁴. Fore wing tinged with purple and with rufous spot on reniform ..... *tenebrata.*
*b*⁴. Fore wing not tinged with purple and without rufous spot on reniform ..... *expolita.*
*b*³. Fore wing with the subterminal line yellowish defined on inner side by red-brown.
*a*⁴. Fore wing with series of dark points beyond postmedial line ..... *externa.*
*b*⁴. Fore wing without series of dark points beyond postmedial line ..... *cervina.*
*c*². Fore wing with the reniform absent..... *castaneipars.*

3917. **Athetis melanopis**, n. sp. (Plate CXXIX. fig. 10.)

♂. Head and thorax black with a slight grey tinge; pectus and legs greyish mixed with brown and black; the tarsi black ringed with white; abdomen ochreous white mixed with brown. Fore wing reddish brown suffused with black and glossed with purplish grey; subbasal line represented by a black striga from costa defined

by rufous on outer side; antemedial line black defined by rufous on inner side, represented by a black striga from costa and waved line from cell to inner margin; orbicular represented by an elongate black spot, the reniform by a rounded black spot with yellow bar near its outer edge, with a slight black streak in discal fold from it to subterminal line; postmedial line very slight and formed of black scales, bent outwards below costa, oblique to discal fold where it is angled outwards, then oblique and minutely dentate; subterminal line very indistinct, defined on inner side by slight blackish dentate marks at middle and somewhat incurved at discal and submedian folds; a terminal series of slight black lunules; a fine pale line at base of cilia. Hind wing yellowish white, the veins and terminal area, except towards tornus, tinged with fuscous; a blackish discoidal spot and terminal line except towards tornus; the underside with the costal area and terminal area to vein 2 irrorated with fuscous, a black discoidal spot and traces of postmedial line from costa to vein 2.

Hab. Transvaal, White R. (*Cooke*), 1 ♂ type. *Exp.* 36 millim.

3918. Athetis leucopis.

Charidea leucopis, Hmpsn. Ann. S. Afr. Mus. ii. p. 293 (1902).

Head and thorax grey tinged with brown and mixed with black; palpi whitish at tips; abdomen grey tinged with brown. Fore wing grey suffused with brown and irrorated with fuscous; subbasal line represented by black striæ from costa and cell defined by grey on outer side; a fine black streak in submedian fold from near base to subterminal line; antemedial line fine, black defined by grey on inner side, angled outwards in submedian fold and above inner margin and inwards in cell and on vein 1; claviform a wedge-shaped black mark on the submedian streak; a black streak in

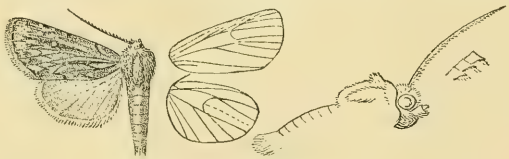


Fig. 93.—*Athetis leucopis*, ♂. ½.

discal fold from middle of cell to subterminal line expanding on inner side of the small round pure white reniform stigma; traces of a diffused medial line; postmedial line fine, black with more prominent spot at costa, strongly bent outwards below costa, then dentate, excurved to vein 4, then oblique, angled inwards in submedian fold and outwards on vein 1, some pale points beyond it on costa; subterminal line slight, greyish defined on inner side by small dentate black marks, excurved below vein 7 and at middle and angled inwards at discal and submedian folds; a terminal series of slight black lunules. Hind wing whitish tinged with

brown; cilia whiter; the underside whitish tinged with brown, the costal area irrorated with brown.

Hab. Cape Colony, Deelfontein (*Sloggett*), 1 ♂, 1 ♀, Transkei (*Miss F. Barrett*), 1 ♂ type. *Exp.* 34 millim.

3919. Athetis nephrosticta, n. sp. (Plate CXXIX. fig. 11.)

♀. Head and thorax brown mixed with grey; abdomen grey tinged with brown. Fore wing grey thickly irrorated with brown, the terminal area suffused with brown; antemedial line blackish, oblique, sinuous, angled inwards on vein 1; orbicular represented by a minute black point, the reniform by a diffused dark mark with white point near its outer edge; medial line oblique to reniform, oblique and sinuous from lower angle of cell to inner margin; postmedial line blackish, minutely dentate, nearly evenly curved; subterminal line whitish, excurved below vein 7 and at middle. Hind wing grey tinged with brown, a fine dark terminal line; the underside whitish thickly irrorated with brown, a brown discoidal spot and postmedial line incurved below vein 3.

Hab. Transvaal, White R. (*Cooke*), 2 ♀ type. *Exp.* 28 millim.

3920. Athetis capicola.

Spodoptera capicola, Herr.-Schäff. Aussereur. Schmett. f. 131 (1850).

Head and thorax whitish mixed with pale brown, the head whiter; palpi black, white at tips; abdomen grey suffused with brown. Fore wing grey-white tinged with brown and slightly irrorated with fuscous; subbasal line represented by small black spots below costa and cell; antemedial line blackish with black spot at costa, oblique, sinuous; orbicular a small round white spot with brown scales in centre; reniform an elliptical black spot defined by white; an indistinct diffused medial line oblique from costa to reniform and incurved below the cell; postmedial line fine, black defined slightly by white on outer side and with black spot at costa, bent outwards below costa, then dentate and produced to points on the veins, incurved below vein 4, some white points beyond it on costa; the terminal area tinged with fuscous, the subterminal line indistinct, whitish defined on inner side by slight black marks, excurved below vein 7 and at middle; a terminal series of black striæ slightly defined by white on inner side. Hind wing whitish suffused with brown, the cilia paler; the underside whitish, the costal area irrorated with brown, a slight discoidal lunule.

Hab. Cape Colony, Transkei (*Miss F. Barrett*), 3 ♂, 1 ♀. *Exp.* 26–28 millim.

3921. Athetis rufipuncta. (Plate CXXIX. fig. 12.)

Caradrina rufipuncta, Hmpsn. Ann. S. Afr. Mus. ii. p. 300 (1902).

♂. Head and thorax grey-white slightly tinged with brown; 2nd joint of palpi at sides and pectus in front blackish; abdomen

white slightly irrorated with brown. Fore wing grey-white slightly irrorated with blackish; subbasal line represented by some black scales below costa; faint traces of an oblique sinuous antemedial line; orbicular a small round white spot with some rufous scales in centre; reniform a rufous bar slightly defined by white; an indistinct oblique dark medial line from lower angle of cell to inner margin; postmedial line represented by a series of slight blackish points, bent outwards below costa, excurved to vein 4, then oblique; a subterminal series of slight blackish marks with white points on their outer side, somewhat angled outwards at vein 7 and excurved at middle; a terminal series of slight black points. Hind wing whitish suffused with brown; the underside whiter tinged and irrorated with brown, traces of a discoidal point and postmedial series of minute streaks on the veins.

Hab. Cape Colony, Annshaw (*Miss F. Barrett*), 1 ♂ type. *Exp.* 28 millim.

3922. **Athetis poliostrota**, n. sp. (Plate CXXIX. fig. 13.)

♂. Head, thorax, and abdomen grey tinged with brown and irrorated with fuscous; palpi black, the extremities of 2nd and 3rd joints white; frons with lateral black bars; antennæ black; metathorax with metallic blue-black patch; tarsi black ringed with white. Fore wing grey tinged with reddish brown and irrorated with black, the terminal area slightly darker; subbasal line represented by small black spots below costa and cell; antemedial line slight, black with small spot at costa, waved, excurved in submedian interspace; orbicular a black point; reniform represented by two black points with white points on their inner side; postmedial line represented by a series of black points, bent outwards below costa, then with series of black points beyond it on the veins, slightly incurved below vein 4; subterminal line faintly defined by fuscous on inner side and slightly excurved below vein 7 and at middle; a fine terminal black line. Hind wing white tinged with brown especially on the veins and terminal area; a fine dark terminal line; cilia white with a strong fuscous line at middle; the underside white, the costal area and terminal area to vein 2 irrorated with brown, a small discoidal spot and traces of waved postmedial line from apex to vein 4.

Hab. Mashonaland, Salisbury (*Marshall*), 1 ♂ type. *Exp.* 26 millim.

3923. **Athetis microtera.** (Plate CXXIX. fig. 14.)

Caradrina microtera, Hmpsn. Ann. S. Afr. Mus. ii. p. 301 (1902).

Head and thorax white mixed with pale brown, the back of head yellowish; palpi black, white at tips; antennæ blackish except basal joint; tarsi brownish with pale rings; abdomen whitish tinged with brown. Fore wing white thickly irrorated with pale brown, the terminal area tinged with fuscous; subbasal

line represented by small black spots below costa and cell; antemedial line black with small spot at costa, waved, erect; orbicular a small round blackish annulus; reniform small, slightly defined by black; traces of an oblique medial line from cell to inner margin; postmedial line black with small spot at costa, bent outwards below costa, then dentate, oblique below vein 4, some pale points beyond it on costa; subterminal line slightly defined by fuscous on inner side, excurved below vein 7 and at middle; a terminal series of black points. Hind wing white, the apex tinged with brown; a fine terminal dark line from apex to vein 2; cilia tinged with brown at apex; the underside with the apical area irrorated with brown.

Hab. Mashonaland, Salisbury (*Marshall*), 1 ♂, 2 ♀ type. *Exp.* 26 millim.

3924. Athetis tenebrata. (Plate CXXIX. fig. 15.)

Caradrina tenebrata, Hmpsn. Ann. S. Afr. Mus. ii. p. 301 (1902).

Head, thorax, and abdomen red-brown mixed with some whitish; palpi blackish at sides; tibiæ and tarsi blackish, the latter ringed with white. Fore wing reddish brown tinged with grey and slightly irrorated with fuscous; subbasal line black defined by grey on outer side, curved, from costa to submedian fold; antemedial line double, blackish, the lines widely separated and filled in with grey, slightly excurved below costa and cell; orbicular and reniform represented by some rufous suffusion; a diffused blackish medial shade; postmedial line double, blackish, the lines widely separated and filled in with grey, bent outwards below costa, then oblique and slightly sinuous; subterminal line slightly defined by brown on inner side and somewhat angled outwards at vein 7 and excurved at middle; a fine pale line at base of cilia. Hind wing whitish suffused with reddish brown especially on the veins and terminal area, a fine dark terminal line; cilia brownish at base, whitish at tips; the underside white, the costal and terminal areas thickly irrorated with red-brown, a large black discoidal lunule and slightly sinuous brown postmedial line.

Hab. Cape Colony, Transkei (*Miss F. Barrett*), 1 ♂, 1 ♀ type. *Exp.* 28 millim.

3925. Athetis expolita. (Plate CXXIX. fig. 16.)

Caradrina expolita, Butl. A. M. N. H. (4) xvii. p. 407 (1876).

♀. Head, thorax, and abdomen reddish brown mixed with some greyish; palpi black at sides, white in front and at tips; pectus, legs, and ventral surface of abdomen whitish irrorated with brown. Fore wing reddish brown mixed with grey and slightly irrorated with fuscous; subbasal line slight, black, from costa to vein 1; antemedial line slight, black, oblique from costa to median nervure, then erect; orbicular absent; reniform a faint dark lunule with

oblique fuscous shade from it to inner margin; postmedial line black, slight, with small spot at costa and series of points beyond it on the veins, slightly excurved from costa to vein 4, then slightly incurved; subterminal line faintly defined by fuscous on inner side, slightly excurved below vein 7 and at middle; a terminal series of slight black points. Hind wing whitish tinged with yellow-brown especially on the veins and termen; cilia whitish with brown line near base; the underside whitish, the costal and terminal areas irrorated with brown, a small discoidal spot, postmedial series of minute streaks on the veins and terminal series of points from apex to vein 2.

Hab. Rodriguez (*Gulliver*), 1 ♀ type. *Exp.* 28 millim.

3926. Athetis externa. (Plate CXXIX. fig. 17.)

Orthosia externa, Wlk. xxxiii. 715 (1865); Hmpsn. Moths Ind. ii. p. 265.

♂. Head and thorax rufous slightly mixed with greyish; palpi fuscous brown; tarsi fuscous with pale rings; abdomen pale greyish rufous mixed with some fuscous. Fore wing rufous slightly irrorated with fuscous; subbasal line fuscous, curved, from costa to submedian fold; antemedial line fuscous, angled outwards below costa, then oblique and angled slightly inwards on vein 1; orbicular a small fuscous spot; reniform a fuscous bar somewhat constricted at middle; medial line rather diffused, dark, oblique from costa to reniform and somewhat incurved below the cell; postmedial line slight, blackish, bent outwards below costa, then oblique and with black points beyond it on the veins; subterminal line yellowish defined on inner side by red-brown, oblique, nearly straight; a terminal series of minute black points; cilia fuscous brown. Hind wing reddish brown with a greyish tinge, the cilia more ochreous; the underside greyish tinged with ochreous and irrorated with brown, a blackish discoidal lunule, waved postmedial line, and terminal series of small black lunules.

Hab. Sikhim, 5 ♂. *Exp.* 32–36 millim.

3927. Athetis cervina. (Plate CXXIX. fig. 18.)

Ilattia cervina, Moore, P. Z. S. 1881, p. 348, pl. 38. f. 12; Hmpsn. Moths Ind. ii. p. 266.

♀. Head and thorax cupreous brown slightly tinged with grey; palpi, pectus, legs, and abdomen grey-brown. Fore wing cupreous brown; subbasal line indistinct, straight, from costa to submedian fold; antemedial line brown, angled outwards below costa and inwards in cell, then excurved; orbicular small, defined by rufous and somewhat elliptical; reniform a small lunule obscured by a diffused rufous patch; an indistinct medial shade, oblique from costa to lower angle of cell, then inwardly oblique; postmedial line brown, slightly bent outwards below costa, then minutely dentate, excurved to vein 4, then incurved, some faint pale points beyond it on costa; subterminal

line whitish defined on inner side by rufous, almost straight; a fine terminal brown line; cilia with a fine white line at base. Hind wing greyish suffused with cupreous brown; a fine brown terminal line; cilia with a fine whitish line at base; the underside whitish thickly irrorated and suffused with cupreous brown, a dark discoidal lunule and indistinct curved postmedial line.

Hab. SIKHIM (*Atkinson*), 1 ♀ type. *Exp.* 30 millim.

3928. Athetis castaneipars. (Plate CXXIX. fig. 19.)

Tæniocampa castaneipars, Moore, Lep. Atk. p. 122 (1882); Hmpsn. Moths Ind. ii. p. 266.

♀. Head and thorax red-brown, the latter with a slight purplish gloss except on tegulæ; pectus whitish tinged with rufous; tarsi ringed with whitish; abdomen whitish suffused with brown, the extremity and ventral surface more ochreous. Fore wing red-brown strongly glossed with purple except on terminal half of costa and terminal area; subbasal line slight, brown, minutely waved, from costa to vein 1; antemedial line brown, minutely waved, oblique; orbicular and reniform absent; a diffused brown medial shade, oblique from costa to lower angle of cell, then incurved; postmedial line slightly bent outwards below costa, then minutely dentate, excurved to vein 4, then incurved; a fine deep red terminal line; cilia with a slight pale line at base, the tips red. Hind wing ochreous white, the veins and terminal area tinged with brown; a slight discoidal point; the underside with small discoidal spot and indistinct curved postmedial line.

Hab. SIKHIM, 1 ♀ type. *Exp.* 32 millim.

SECT. IV. Antennæ of male ciliated.

A. Fore wing of male with slight fovea in end of cell and groove beyond the cell below vein 6.

3929. Athetis foveata, n. sp.

♂. Head, thorax, and abdomen ochreous white; palpi black at sides, white in front and at tips; antennæ black; tarsi black ringed with white. Fore wing ochreous white irrorated with a few brown

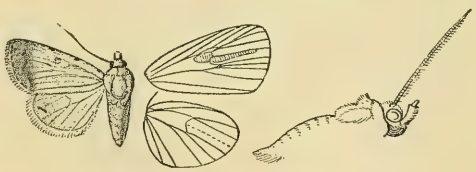


Fig. 94.—*Athetis foveata*, ♂. $\frac{3}{2}$.

scales, the terminal area suffused with brown; subbasal and antemedial lines represented by black points on costa; orbicular absent; reniform very small and faintly defined by brown; an indistinct

sinuous brown line from lower angle of cell to inner margin; post-medial line very indistinct, brownish with black point at costa, bent outwards below costa, then oblique; subterminal line indistinct, pale, defined on inner side by brown suffusion, excurved below vein 7 and at middle; a terminal series of black striæ; cilia brown at base, pale at tips. Hind wing yellowish white, the terminal area tinged with brown from apex to vein 2; a fine brown terminal line; cilia brownish at apex; the underside with the costal area slightly irrorated with brown, the apex tinged with brown.

♀. Head, thorax, abdomen, and fore wing much more strongly irrorated with brown, the last with slight subbasal line from costa to submedian fold and traces of an oblique sinuous antemedial line and of a minute brownish orbicular stigma.

Hab. Transvaal, White R. (*Cooke*), 1 ♂, 1 ♀. *Exp.* ♂ 22, ♀ 24 millim.

B. Hind wing of male without secondary sexual characters.
  a. Fore wing with the reniform with pale annulus.
    a^1. Fore wing with the reniform filled in with black.
      a^2. Fore wing with the black centre of reniform broken up by pale streaks on the veins ..... *delecta.*
      b^2. Fore wing with the black centre of reniform bisected by a pale streak at middle ..... *conspicua.*
      c^2. Fore wing with the black centre of reniform entire.
        a^3. Fore wing with dentate black marks on inner side of subterminal line towards costa ..... *triquetra.*
        b^3. Fore wing without dentate black marks on inner side of subterminal line towards costa . *atriluna.*
    b^1. Fore wing with the reniform not filled in with black.
      a^2. Fore wing with the reniform constricted at middle and angled inwards on median nervure.
        a^3. Fore wing with the orbicular black with white annulus.
          a^4. Hind wing white, the apex suffused with brown ..... *gonionephra.*
          b^4. Hind wing uniform brown ..... *prætexta.*
        b^3. Fore wing with the orbicular reduced to a slight pale point ..... *contusa.*
      b^2. Fore wing with the reniform not constricted at middle or angled inwards on median nervure.
        a^3. Hind wing uniform brown.
          a^4. Fore wing with waved whitish terminal line ..... *placata.*
          b^4. Fore wing without waved whitish terminal line.
            a^5. Fore wing with the subterminal line almost straight ..... *divisa.*
            b^5. Fore wing with the subterminal line sinuous ..... *furvula.*
        b^3. Hind wing whitish tinged with brown especially on terminal area.
          a^4. Fore wing without distinct black spots on costa at ante- and postmedial lines.
            a^5. Fore wing not strongly irrorated with black.

a^6. Fore wing ochreous tinged with rufous; hind wing brownish ochreous ..... *alsines.*
b^6. Fore wing red-brown tinged with grey; hind wing white, the terminal area suffused with brown ..... *blanda.*
c^6. Fore wing whitish tinged with rufous; hind wing almost wholly white ..... *ambigua.*
b^5. Fore wing strongly irrorated with black . *superstes.*
b^1. Fore wing with distinct black spots on costa at ante- and postmedial lines ..... *respersa.*
b. Fore wing with the reniform defined by more or less prominent white points.
a^1. Hind wing wholly suffused with brown.
a^2. Fore wing with the ground-colour not yellow.
a^3. Fore wing with prominent white spot on subterminal line above tornus ..... *leucosticta.*
b^3. Fore wing without white spot on subterminal line above tornus.
a^4. Fore wing with the reniform filled in with deep rufous.
a^5. Fore wing nearly uniform red-brown.
a^6. Fore wing dark red-brown; antennæ of male minutely ciliated ..... *interstincta.*
b^6. Fore wing greyer; antennæ of male with long cilia ..... *longiciliata.*
b^5. Fore wing pale rufous or greyish variegated with deep rufous or brown ..... *fasciata.*
b^4. Fore wing with the reniform concolorous.
a^5. Fore wing with small white spot on outer edge of reniform with white points above and below it ..... *satellitia.*
b^5. Fore wing with the reniform defined by slight white points ..... *conformis.*
b^2. Fore wing yellow suffused with rufous ..... *pulmonaris.*
b^1. Hind wing white, the terminal area suffused with brown.
a^2. Fore wing with distinct black spot on costa at medial line.
a^3. Fore wing yellow tinged with red ..... *flava.*
b^3. Fore wing not yellow tinged with red.
a^4. Fore wing with the postmedial area suffused with fuscous and darker than the ground-colour.
a^5. Fore wing with the terminal area suffused with fuscous ..... *fusca.*
b^5. Fore wing with the terminal area not suffused with fuscous ..... *morosa.*
b^4. Fore wing with the postmedial area not darker than the ground-colour.
a^5. Fore wing with the reniform filled in with black ..... *rebeli.*
b^5. Fore wing with the reniform not filled in with black.
a^6. Fore wing not, or hardly, irrorated with black.
a^7. Fore wing whitish grey without ochreous or brown tinge ..... *rougemonti.*
b^7. Fore wing more or less strongly tinged with brown or ochreous.
a^8. Fore wing with the subterminal line defined on inner side by slight dentate rufous marks.

a^9. Fore wing white faintly tinged with brown ..... *jurassica.*
b^9. Fore wing purplish brown suffused with grey, the subterminal line grey and continuous ..... *selini.*
c^9. Fore wing ochreous brown suffused with grey, the subterminal line formed of ochreous points ..... *flavirena.*
b^8. Fore wing with the subterminal line defined on inner side by fuscous ..... *vullschlegeli.*
b^6. Fore wing distinctly irrorated with black.
a^7. Hind wing slightly tinged with brown especially in female.
a^8. Fore wing grey faintly tinged with ochreous brown.
a^9. Fore wing with the medial line strong, black ..... *selinoides.*
b^9. Fore wing with the medial line much less prominent.
a^{10}. Fore wing with the dentate marks before subterminal line black.
a^{11}. Fore wing with the subterminal line not angled inwards and forming a dark mark at discal fold ..... *menetriesi.*
b^{11}. Fore wing with the subterminal line angled inwards and forming a dark mark at discal fold ..... *bremusa.*
b^{10}. Fore wing with the dentate marks before subterminal line rufous ..... *multifera.*
b^8. Fore wing much more strongly tinged with ochreous brown.
a^9. Fore wing with the subterminal line defined on inner side by dentate rufous marks ..... *himaleyica.*
b^9. Fore wing with the subterminal line defined on inner side by fuscous ..... *chinensis.*
b^7. Hind wing pure white, the veins and termen only tinged with brown.
a^8. Fore wing distinctly tinged with ochreous brown ..... *clavipalpis.*
b^8. Fore wing whitish slightly tinged with ochreous.
a^9. Fore wing with the terminal area suffused with fuscous ..... *extima.*
b^9. Fore wing with the terminal area not suffused with fuscous ..... *grisea.*
c^8. Fore wing grey with hardly any brown or ochreous tinge.
a^9. Fore wing with the terminal area not suffused with fuscous ..... *hispanica.*
b^9. Fore wing with the terminal area suffused with fuscous ..... *ingrata.*

b^2. Fore wing without black spot on costa at medial line.
a^3. Hind wing pure white, the termen not suffused with brown ..... *albina*.
b^3. Hind wing with the termen suffused with brown.
a^4. Fore wing with very prominent dentate black marks before middle of subterminal line ..... *terrea*.
b^4. Fore wing with much less distinct dentate rufous marks before middle of subterminal line ..... *fuscicornis*.
c^4. Fore wing with the subterminal line represented by slight dentate black marks ..... *melanosticta*.
d^4. Fore wing with slight fuscous shade before subterminal line.
a^5. Fore wing with the ground-colour ochreous white ..... *flavipuncta*.
b^5. Fore wing grey suffused with brown.
a^6. Fore wing with the postmedial line excurved from below costa to vein 4.
a^7. Fore wing with deep orange spot on outer edge of reniform ..... *croceipuncta*.
b^7. Fore wing with slight yellowish spot on outer edge of reniform.
a^8. Fore wing with the orbicular a small indistinct spot ..... *germini*.
b^8. Fore wing with the orbicular a black point.
a^9. Fore wing with the postmedial line minutely dentate.
a^{10}. Fore wing without series of black points beyond postmedial line ..... *obtusa*.
b^{10}. Fore wing with series of black points beyond postmedial line ..... *ignava*.
b^9. Fore wing with the postmedial line not dentate ..... *pigra*.
c^7. Fore wing with slight white spot on outer edge of reniform ..... *sincera*.
b^6. Fore wing with the postmedial line straight from below costa to vein 4.
a^7. Fore wing with the antemedial line angled inwards on vein 1 ..... *placida*.
b^7. Fore wing with the antemedial line not angled inwards on vein 1 ..... *cognata*.
c^5. Fore wing yellowish suffused with rufous . *singula*.
d^5. Fore wing blackish.
a^6. Fore wing with orange spot on outer edge of reniform ..... *heliastis*.
b^6. Fore wing with slight white lunule on outer edge of reniform ..... *anomæosis*.
c. Fore wing with the reniform not defined by white points.
a^1. Fore wing with the reniform white.
a^2. Fore wing without black lunule in centre of reniform ..... *albirena*.
b^2. Fore wing with black lunule in centre of reniform ..... *leuconephra*.

b^1. Fore wing with the reniform filled in with black.
  a^2. Hind wing white, the terminal area more or less suffused with brown.
    a^3. Fore wing with black lunule on outer edge of reniform and two black points on inner edge . *bicornis.*
    b^3. Fore wing without black points on inner edge of reniform.
      a^4. Fore wing with the orbicular a black point . *meralis.*
      b^4. Fore wing with the orbicular a black spot.
        a^5. Fore wing with the postmedial line not dentate ..... *melanopis.*
        b^5. Fore wing with the postmedial line minutely dentate.
          a^6. Fore wing without black streak in discal fold beyond postmedial line ..... *glauca.*
          b^6. Fore wing with black streak in discal fold beyond postmedial line ..... *melanephra,*
  b^2. Hind wing wholly suffused with brown.
    a^3. Fore wing with the reniform a black lunule ... *atrirena.*
    b^3. Fore wing with the reniform an elliptical fuscous spot.
      a^4. Fore wing rufous suffused with fuscous ..... *absorbens.*
      b^4. Fore wing grey suffused with brown ..... *pallicornis.*
c^1. Fore wing with the reniform not filled in with black.
  a^2. Fore wing with black spot on costa at medial line.
    a^3. Fore wing yellowish white not irrorated with black, the lines indistinct ..... *pertinax.*
    b^3. Fore wing ochreous white irrorated with black, the lines with black spots on them ..... *vicina.*
    c^3. Fore wing greyish ochreous largely suffused with fuscous, the lines indistinct fuscous ... *flavitincta.*
  b^2. Fore wing without black spot on costa at medial line.
    a^3. Fore wing with the orbicular a small dark spot.
      a^4. Fore wing with the subterminal line nearly straight ..... *stygia.*
      a^5. Fore wing with the subterminal line sinuous.
        a^6. Fore wing grey ..... *paupera.*
        b^6. Fore wing greyish ochreous ..... *morpheus.*
        c^6. Fore wing red-brown.
          a^7. Fore wing without medial shade..... *æschria.*
          b^7. Fore wing with oblique medial shade from cell to inner margin ..... *nitens.*
        d^6. Fore wing black-brown ..... *funesta.*
    b^3. Fore wing with the orbicular a black point.
      a^4. Fore wing without dark spot beyond postmedial line in discal fold.
        a^5. Fore wing greyish suffused with dark brown.
          a^6. Hind wing wholly tinged with brown.
            a^7. Fore wing with the postmedial line strongly bent outwards below costa . *glutcosa.*
            b^7. Fore wing with the postmedial line oblique from costa to vein 6 ..... *tarda.*
          b^6. Hind wing white, the costal area and in female the terminal area tinged with brown ..... *smintha.*
        b^5. Fore wing whitish tinged with brown and irrorated with black ..... *aspersa.*

b^4. Fore wing with dark spot beyond postmedial line in discal fold.
a^5. Fore wing with the terminal area concolorous ..... *maculatra.*
b^5. Fore wing with the terminal area suffused with dark reddish brown ..... *bimacula.*
c^3. Fore wing with the orbicular absent.
a^4. Fore wing dark cupreous brown ..... *maurella.*
b^4. Fore wing suffused with reddish brown.
a^5. Fore wing with the medial shade very indistinct ..... *hyperæschra.*
b^5. Fore wing with the medial shade prominent ..... *variana.*
c^4. Fore wing pale grey ..... *gilva.*
d^4. Fore wing yellowish white.
a^5. Fore wing with dark medial shade ..... *drasteroides.*
b^5. Fore wing without medial shade ..... *fixseni.*
d^3. Fore wing with the orbicular a small rufous spot ..... *casearia.*
d. Fore wing with the reniform absent ..... *melanurina.*

3930. Athetis delecta.

Caradrina delecta, Moore, P. Z. S. 1881, p. 349, pl. 38. f. 15; Hmpsn. Moths Ind. ii. p. 261.

Head and thorax white tinged and slightly irrorated with brown; palpi blackish at sides except at tips; antennæ fuscous; abdomen whitish tinged with brown. Fore wing whitish tinged with pale brown and very slightly irrorated with fuscous, the terminal area somewhat browner; subbasal line black, excurved below costa and ending at submedian fold; antemedial line fine, black, oblique, sinuous; orbicular black defined by white and broken up by white into three spots; reniform black broken up by white into three spots on inner side and four on outer; an indistinct sinuous medial line; postmedial line slight, blackish and with small black spot at costa, bent outwards below costa, then with series of black points beyond it on the veins, oblique, and slightly incurved at submedian fold; a prominent white subterminal line slightly incurved below vein 3; a terminal series of black points with white points on inner side; cilia with a fine white line at base. Hind wing white, the veins and marginal areas tinged with brown, a slight discoidal point; cilia whitish with a slight brown line through them; the underside with the costal and terminal areas slightly irrorated with brown, a small discoidal spot and postmedial series of minute streaks on the veins.

Hab. C. China, Fu-chau (*Leech*), 1 ♀; Punjab, Kulu, Sultanpur (*G. Young*), 2 ♀, Umballa; Sikhim (*Dudgeon*), 1 ♂, 1 ♀. *Exp.* 30 millim.

3931. Athetis conspicua. (Plate CXXIX. fig. 20.)

Orthosia conspicua, Leech, Trans. Ent. Soc. 1900, p. 79.

Head and thorax reddish brown mixed with grey; palpi dark brown at sides, whitish in front and at extremities of 2nd and

3rd joints; tibiæ at extremity and tarsi ringed with white; abdomen grey-brown. Fore wing purplish grey thickly irrorated with brown, the postmedial costal area and terminal area suffused with red-brown; a black subbasal line from costa to submedian fold, slightly excurved below costa; antemedial line black, strong at costa, then slight and interrupted, oblique, and slightly angled inwards on the veins; orbicular and reniform deep black with white annuli defined by black scales, the former large, irregularly rounded, the latter narrow, bisected by a white streak at middle and angled inwards on median nervure; a diffused red-brown medial line, oblique from costa to reniform and angled inwards in submedian fold; postmedial line with black spot on costa, then reduced to a series of black points and striæ with series of black points beyond them on the veins followed by a grey shade, slightly bent outwards below costa, then slightly excurved to vein 4 and approximated to reniform, oblique to submedian fold, then somewhat excurved; subterminal line white defined on inner side by a red-brown line, very slightly excurved; a fine waved grey line just before termen; a fine brown terminal line; cilia with grey line at base followed by a brown line. Hind wing pale reddish brown, the terminal area somewhat darker; cilia with yellowish line at base followed by a brown line; the underside whitish tinged and irrorated with brown, the terminal area suffused with brown except towards tornus, a blackish discoidal spot and indistinct sinuous postmedial line.

Hab. W. China, Chang-yang (*Pratt*), 1 ♂ type, Chia-kou-ho (*Pratt*), 1 ♂, 2 ♀, Ta-chien-lu (*Pratt*), 2 ♀. *Exp.* 32 millim.

3932. Athetis triquetra. (Plate CXXIX. fig. 21.)

Pyrophila triquetra, Grote, Papilio, iii. p. 78 (1883); Smith, Cat. Noct. N. Am. p. 197.

♂. Head and thorax grey tinged with brown and mixed with some fuscous; palpi black at sides, whitish in front and at tips; antennæ black; pectus and legs whitish mixed with some brown, the tarsi fuscous ringed with white; abdomen grey suffused with brown. Fore wing grey tinged with brown and irrorated with fuscous; subbasal line represented by a slight dark striga from costa; antemedial line indistinctly double filled in with grey, the outer line with small blackish spot at costa, oblique, sinuous; orbicular and reniform large, fuscous with whitish annuli, the former round, the latter elliptical; postmedial line blackish defined by whitish on outer side, double towards costa and the inner line with small black spot at costa, bent outwards below costa, slightly angled inwards at discal fold, incurved below vein 4, the costa beyond it whitish; subterminal line indistinct, pale, defined on inner side by a black patch at costa with small spot below it and wedge-shaped patch at discal fold, then slightly by fuscous, very slightly angled outwards at vein 7, then somewhat oblique; a

fine blackish terminal line and white line at base of cilia. Hind wing whitish, the terminal area tinged with brown from apex to submedian fold; a brown terminal line; cilia brown at apex, then white with yellowish line at base followed by some brown; the underside with the costal area irrorated with brown, a small black discoidal spot and terminal series of slight lunules from apex to vein 2.

Hab. U.S.A., Arizona, Huachuca Mts., 3 ♂. *Exp.* 30 millim.

3933. Athetis atriluna.

Caradrina atriluna, Guen. Noct. i. p. 252 (1852).
Caradrina indicata, Wlk. x. 299 (1856).
Caradrina infusca, Rmbr. Cat. Lep. S. And. pl. 11. f. 5 (1858).
Caradrina mediterraneæ, Beth.-Baker, Trans. Ent. Soc. 1894, p. 42, pl. 1. f. 11; Staud. Cat. Lep. pal. p. 196.
Caradrina distincta, Staud. Iris, x. p. 286, pl. 4. f. 21 (1897); id. Cat. Lep. pal. p. 196.

Head and thorax whitish suffused with pale red-brown, the head whiter; palpi black, white at tips; antennæ brown except at base; abdomen pale brown. Fore wing grey tinged with brown and with slight dark irroration, the terminal area somewhat darker; a black point at base of costa; subbasal line represented by black points below costa and cell; traces of an oblique sinuous antemedial line with small black spot at costa; orbicular absent; reniform a narrow black lunule with slight white annulus defined at sides by some black scales; a small medial black spot on costa; postmedial line indistinct, dark, faintly defined by whitish on outer side and with small black spot at costa, bent outwards below costa, then minutely dentate, excurved to vein 4, then oblique, some whitish points beyond it on costa; subterminal line represented by some whitish points towards costa; traces of a terminal series of dark points; cilia with a fine white line at base. Hind wing white, the apex tinged with brown; a fine brown terminal line; the underside with the costal area slightly irrorated with brown, a terminal series of dark points from apex to vein 2.

Hab. ? Spain, Andalusia; St. Helena (*Wollaston*), 1 ♂, 3 ♀, type *indicata*; Egypt, Alexandria, type † *mediterraneæ* in Coll. Bethune-Baker, Cairo (*Graves*), 1 ♂; Palestine; Abyssinia; Br. E. Africa (*Gregory*), 1 ♂, Kibauni (*Crawshay*), 1 ♂, Machakos (*Crawshay*), 1 ♂, 1 ♀, Neugia (*Crawshay*), 1 ♀, Eb Urru (*Betton*), 1 ♀; Mashonaland, Salisbury (*Dobbie*), 1 ♀; Transvaal (*Cholmley*), 1 ♀; C. Colony, Deelfontein (*Sloggett*), 2 ♀, Simonstown (*de la Garde*), 1 ♂. *Exp.* 24–32 millim.

3934. Athetis gonionephra, n. sp. (Plate CXXIX. fig. 22.)

♂. Head, thorax, and abdomen whitish mixed with brown; palpi with the 2nd joint black at sides; antennæ black; tarsi

slightly ringed with white. Fore wing pale grey-brown with a cupreous gloss, the veins somewhat darker; subbasal line represented by a black striga from costa and spot below the cell; antemedial line black, with black spot at costa, slightly angled outwards below costa and in submedian fold and inwards on median nervure and vein 1; orbicular fuscous defined by some white scales, round; reniform with pale centre defined by fuscous, with slight white annulus, constricted at middle and angled inwards on median nervure; a slight oblique sinuous medial line from lower angle of cell to inner margin; postmedial line black, bent outwards below costa, then dentate and produced to black points on the veins, oblique below vein 4; subterminal line indistinct, ochreous defined on inner side by fuscous suffusion, angled outwards at vein 7 and excurved at middle; a terminal series of black striæ; cilia fuscous mixed with greyish. Hind wing white, the costal area suffused with brown, the veins and a fine terminal line brown; cilia brown with a fine white line at base, wholly white towards tornus; the underside with the costal area irrorated with brown.

Hab. Natal, Maritsburg (*Queckett*), 1 ♂ type. *Exp.* 24 millim.

3935. Athetis prætexta. (Plate CXXIX. fig. 23.)

Caradrina prætexta, Swinh. A. M. N. H. (7) xv. p. 152 (1905).

Head and thorax grey tinged with brown; palpi blackish at sides except at tips; tarsi blackish ringed with white; abdomen grey suffused with dark brown, the anal tuft of male yellow. Fore wing grey-white irrorated and in parts suffused with red-brown; subbasal line double filled in with whitish, waved, from costa to submedian fold; antemedial line double filled in with whitish, angled outwards below costa and excurved below submedian fold; orbicular a black point defined by whitish; reniform chocolate-brown with whitish annulus, constricted at middle and slightly angled inwards on median nervure; a waved dark medial shade; postmedial line double filled in with whitish, slightly bent outwards below costa, then produced to double black points on the veins, oblique below vein 4, some whitish points beyond it on costa; subterminal line whitish defined on inner side by red-brown, slightly angled outwards below costa and excurved at middle; terminal area suffused with brown; a terminal series of small black lunules slightly defined on inner side by whitish; cilia brown with a waved white line through them. Hind wing greyish suffused with brown, an indistinct discoidal lunule; a terminal series of slight dark lunules from apex to vein 2; cilia yellowish white with a brown line through them; the underside greyish irrorated with brown, a large dark discoidal spot, minutely waved postmedial line, incurved below vein 2, traces of a subterminal band and a terminal series of small black lunules.

Hab. Assam, Khásis, 1 ♂, 1 ♀ type. *Exp.* 32 millim.

3936. Athetis contusa.

Noctua contusa, Frr. Neue Beitr. pl. 534. f. 2 & pl. 550 (1849); Herr.-Schäff. Eur. Schmett., Noct. ff. 517, 518; Guen. Noct. ii. p. 5, pl. 7. f. 4; Staud. Cat. Lep. pal. p. 204.

Head and thorax pale red-brown mixed with grey; pectus paler; abdomen grey tinged with brown. Fore wing pale red-brown tinged with grey and with slight dark irroration, the terminal area rather darker; subbasal line represented by a slight dark striga from costa; antemedial line dark, excurved below costa and above inner margin and incurved in submedian interspace; orbicular a pale point faintly defined by brown; reniform dark with faint pale annulus, narrow above, constricted at middle and triangular below; a diffused dark medial shade, oblique from costa to lower angle of cell, then inwardly oblique; postmedial line brown defined by greyish on outer side, oblique from costa to vein 4, then inwardly oblique; subterminal line pale defined on inner side by brown, slightly excurved below vein 7 and at middle and angled inwards at discal and submedian folds. Hind wing greyish suffused with brown, the cilia pale at tips; the underside whitish tinged and slightly irrorated with brown, a narrow discoidal lunule and diffused curved postmedial line.

Hab. Germany, Zeller & D'Emmick Colls.; E. Siberia, Dahuria, Ussuri. *Exp.* 32–38 millim.

Larva. Kirby, Butt. & Moths Eur. p. 186; Hffm. Raup. p. 115, pl. 31. f. 10.

Pale green, whitish above; dorsal line pale, dull; lateral stripe white; warts white. Food-plant: *Populus tremulus*, between united leaves. 5.

3937. Athetis placata. (Plate CXXIX. fig. 24.)

Orthosia placata, Leech, Trans. Ent. Soc. 1900, p. 79.

♂. Head and thorax brown largely mixed with grey; palpi black-brown at sides, grey in front; tarsi ringed with white; anal tuft tinged with rufous. Fore wing grey irrorated with brown and blackish, especially on costal and terminal areas; subbasal line represented by faint double dark striæ from costa; antemedial line very indistinct, oblique, double at costa; orbicular and reniform large with brownish centres and whitish annuli, the former round; a faint oblique dark medial shade; postmedial line represented by a double series of black points, bent outwards below costa and incurved below vein 4, some whitish points beyond it on costa; subterminal line white defined by red-brown on inner side, oblique, very slightly curved; a terminal series of small black lunules defined by a waved whitish line; cilia with two slight whitish lines at middle and white tips. Hind wing grey-brown, the terminal area rather darker; a fine brown terminal line; cilia with fine ochreous line at base and white tips; the underside grey-white

thickly irrorated with brown, a brown discoidal spot and curved postmedial line.

Hab. W. China, Chia-kou-ho (*Pratt*), 1 ♀ type. *Exp.* 38 millim.

3938. Athetis divisa. (Plate CXXIX. fig. 25.)

Ipimorpha divisa, Moore, Lep. Atk. p. 123 (1882); Hmpsn. Moths Ind. ii. p. 265.

Head and thorax reddish brown mixed with grey; palpi blackish; tegulæ and prothoracic crest with slight whitish tips; tarsi black ringed with white; abdomen grey-brown. Fore wing reddish brown tinged with grey and with slight dark irroration; subbasal line whitish, slightly excurved below costa and ending at submedian fold, a slight oblique whitish striga beyond it in cell; antemedial line blackish defined by white on inner side, oblique, almost straight; orbicular and reniform large with white annuli, the former round, the latter elliptical; a faint diffused dark medial shade; postmedial line dark defined by white on outer side and with slight dark points beyond it on the veins, excurved from costa to vein 4, then slightly incurved, some pale points beyond it on costa; subterminal line white defined by brown on inner side, oblique, almost straight; a terminal series of minute black lunules; cilia with fine yellowish line at base. Hind wing grey suffused with brown; cilia whitish; the underside whitish irrorated with brown, the costal area suffused with brown and irrorated with whitish, a blackish discoidal lunule and diffused postmedial and subterminal lines.

Hab. Kashmir, Narkundah (*Leech*), 1 ♂, 3 ♀; Punjab, Simla, 1 ♂, 1 ♀ type, Dharmsála (*Hocking*), 1 ♂, 8 ♀. *Exp.* 28–30 millim.

3939. Athetis furvula.

Noctua furvula, Hübn. Eur. Schmett., Noct. f. 390 (1808).
Noctua dasychira, Hübn. Eur. Schmett., Noct. f. 634 (1818).
Caradrina lenta, Treit. Schmett. Eur. v. (2) p. 257 (1825); Hübn. Eur. Schmett., Noct. f. 825 (1834); Frr. Beitr. pl. 47; Dup. Lép. Fr., Suppl. iii. p. 305, pl. 28. f. 3; Staud. Cat. Lep. pal. p. 198.
Caradrina lentina, Staud. Stett. ent. Zeit. 1888, p. 255.

Head and thorax grey mixed with red-brown; palpi black, whitish at tips; antennæ ringed black and white at base; tarsi fuscous with slight pale rings; abdomen red-brown with slight greyish segmental lines. Fore wing greyish thickly irrorated with brown, the postmedial and terminal areas suffused with brown; subbasal line brown, angled outwards below costa and ending at submedian fold; antemedial line blackish with stronger bar from costa, oblique, waved, angled inwards at vein 1; orbicular a black point defined by whitish; reniform dark brown with some whitish scales on edges, elliptical; a diffused dark medial shade from costa to reniform and lower angle of cell to inner margin; postmedial line blackish, bent outwards below costa, then dentate and produced to points on the veins, slightly incurved at discal fold, incurved

below vein 4, some whitish points beyond it on costa; subterminal line whitish defined on inner side by dark reddish brown, oblique towards costa, angled outwards at vein 7 and excurved at middle; a terminal series of small black lunules defined on inner side by a

Fig. 95.—*Athetis furvula*, ♂. ½.

fine waved white line. Hind wing greyish suffused with brown; a fine terminal brown line; the underside whitish thickly irrorated with brown, especially on costal and terminal areas, a slight discoidal spot and diffused curved postmedial line.

Ab. 1. *lentina*. Smaller and darker.—W. and E. Turkestan, E. Siberia, Japan, Corea.

Hab. Austria, Tirol; Hungary, Zeller, Fry, Leech and D'Emmick Colls.; Russia, Sarepta; ? Armenia; W. Turkestan, Issyk Kul; W. Siberia, Altai; E. Turkestan, Thian-Shan Mts.; Mongolia, Uliassutai; E. Siberia, Amurland, Ussuri; Japan, Oiwake (*Pryer*), 2 ♂, 1 ♀; Corea. *Exp.* 22–30 millim.

Larva. Kirby. Butt. & Moths Eur. p. 175; Hffm. Raup. p. 110, pl. 30. f. 8. Clay-coloured speckled with brown; thoracic somites with pale lateral line, the abdominal somites with oblique yellowish streak edged with black. Food-plants: Low-growing herbs.

3940. Athetis alsines.

Noctua alsines, Brahm, Ins. Kal. ii. p. 114 (1791); Borkh. Eur. Schmett. iv. p. 607 (1792); Hübn. Eur. Schmett., Noct. f. 577; Dup. Lép. Fr. vi. p. 63, pl. 76. f. 4; Herr.-Schäff. Eur. Schmett., Noct. f. 379; Staud. Cat. Lep. pal. p. 197.
Caradrina sericea, Speyer, Stett. ent. Zeit. 1867, p. 73.
Caradrina levis, Staud. Stett. ent. Zeit. 1888, p. 29.
Caradrina amurensis, Staud. Rom. Mém. vi. p. 486 (1892).

Head and thorax greyish ochreous suffused with rufous; palpi fuscous at sides with slight greyish ring at extremity of 2nd joint; abdomen ochreous tinged with brown. Fore wing ochreous tinged with rufous and irrorated with fuscous, the postmedial and terminal areas suffused with fuscous; subbasal line represented by a slight dark striga from costa; antemedial line indistinct, oblique, sinuous, angled inwards on vein 1; orbicular and reniform well developed, brown with whitish annuli, the former rather oblique elliptical; a diffused dark medial line, oblique from costa to reniform, incurved from lower angle of cell to inner margin; postmedial line indistinct, defined by ochreous on outer side, bent outwards below costa, then minutely dentate and produced to black points on the veins, excurved to vein 4, then incurved; subterminal line ochreous defined

by fuscous on inner side, slightly excurved below vein 7 and at middle, then incurved; traces of a terminal series of black points; cilia with a fine ochreous line at base. Hind wing brownish ochreous, the cilia with a brownish line through them from costa to vein 2; the underside with the costal area irrorated with brown, a small black discoidal spot.

Ab. 1. *sericea*. Fore wing narrower, silky grey.—Holland, Germany.

Ab. 2. *levis*. Much paler; fore wing yellowish.—Armenia, Asia Minor, W. Turkestan.

Ab. 3. *amurensis*. Smaller and darker.—Ussuri.

Hab. Britain, Scotland, Leech Coll., Forres (*Salvage*), England, Leech Coll., Ireland, Derry (*Salvage*); France, Sand Coll.; Holland; Germany, Zeller, Frey and Leech Colls.; Austria; Hungary, Leech Coll.; Switzerland; Spain, Catalonia, Bilbao, Castille; Italy; Russia, Livonia, Zeller Coll.; Armenia; Asia Minor, Bithynia; W. Turkestan, Ferghana, Issyk Kul; W. Siberia, Altai; E. Siberia, Ussuri. *Exp.* 30–36 millim.

Larva. Meyr. Brit. Lep. p. 122; Barrett, Lep. Brit. v. p. 287, pl. 221. f. 2.

Ochreous, sometimes tinged with reddish, dorsally browner; dorsal line pale, partly dark-edged; subdorsal line pale, dark-edged, more broadly below; a lateral series of dark brown marks sometimes present; spiracular line pale; head dark brown. Food-plants: *Stellaria*, *Rumex*, *Viola*, &c. 9–5.

3941. Athetis blanda.

Noctua blanda, Schiff. Wien. Verz. p. 77 (1776); Fabr. Mant. Ins. ii. p. 147 (1787); Dup. Lép. Fr. vi. p. 55, pl. 75. f. 6.
Noctua taraxaci, Hübn. Eur. Schmett.. Noct. f. 575 (1802); Dup. Lép. Fr. vi. p. 50, pl. 75. f. 4; Staud. Cat. Lep. pal. p. 197.
Orthosia guttilinea, Wlk. xv. 1709 (1858).

Head and thorax pale reddish brown; palpi black, whitish at tips; antennæ fuscous, whitish at base; tarsi fuscous with slight pale rings; abdomen whitish tinged with reddish brown. Fore wing greyish suffused with red-brown and irrorated with black, the costal edge whitish; subbasal line slight, blackish, curved, from costa to submedian fold; antemedial line indistinct, oblique, sinuous with blackish points at costa, median nervure and vein 1; orbicular and reniform large, brown defined by white, the former round, the latter elliptical; faint traces of an oblique line from lower angle of cell to inner margin; postmedial line indistinct, with black point at costa and series of points beyond it on the veins, bent outwards below costa and incurved below vein 4; subterminal line whitish, defined on inner side by fuscous suffusion and the area beyond it suffused with fuscous, slightly excurved below vein 7 and at middle; traces of a terminal series of dark points; cilia with a slight whitish line at base. Hind wing white, the veins and terminal area tinged with reddish brown; cilia white at base, mixed with brown at tips; the underside with the

costal area tinged with rufous and irrorated with brown, a discoidal point and traces of subterminal line from costa to discal fold.

Hab. Britain, Leech Coll.; France; Germany, Zeller and Leech Colls.; Austria, Zeller Coll.; Hungary, Leech Coll.; Switzerland, Frey Coll.; ? Spain, Catalonia; Scandinavia (*Schöyen*); Finland, Leech Coll.; Russia, Urals; Armenia; ? Asia Minor, Bithynia; hab. ign., 1 ♂ type *guttilinea*. *Exp.* 30–36 millim.

Larva. Meyr. Lep. Brit. p. 123; Barrett, Brit. Lep. v. p. 290, pl. 221. f. 3.

Pale ochraceous or brownish, slightly freckled with blackish; dorsal line pale yellowish, traversing a series of small blackish marks; subdorsal line pale, defined below by a strong dark brown line; spiracular line brownish; head ochreous marked with brown. Food-plants: *Stellaria*, *Rumex*, Grasses, &c. 9–4.

3942. Athetis ambigua.

Noctua ambigua, Schiff. Wien. Verz. p. 77 (1876); Fabr. Mant. Ins. ii. p. 148 (1787); Staud. Cat. Lep. pal. p. 197.
Noctua plantaginis, Hübn. Eur. Schmett., Noct. f. 576 (1802); Dup. Lép. Fr. vi. p. 59, pl. 76. f. 2; Herr.-Schäff. Eur. Schmett., Noct. f. 381.
Orthosia uniformis, Swinh. Trans. Ent. Soc. 1885, p. 350, pl. 9. f. 6; Hmpsn. Moths Ind. ii. p. 261.
Caradrina hilaris, Staud. Cat. Lep. pal. p. 197 (1901).

Head and thorax whitish mixed with pale rufous; palpi with the 1st and 2nd joints blackish at sides; abdomen whitish tinged with rufous. Fore wing whitish suffused with pale rufous and slightly irrorated with brown, the costal edge white; subbasal line blackish, curved, from costa to submedian fold; antemedial line blackish, oblique, waved, excurved below submedian fold and angled inwards on vein 1; orbicular and reniform large, reddish brown defined by white, the former round, the latter elliptical; faint traces of a diffused sinuous line from lower angle of cell to inner margin; postmedial line blackish, bent outwards below costa, then dentate and produced to black points on the veins, incurved below vein 4, a faint whitish line beyond it; subterminal line whitish excurved below vein 7 and at middle; a terminal series of black points; cilia with a fine whitish line at middle. Hind wing white; the underside with the costal area irrorated with brown, a small discoidal spot, traces of a postmedial line with minute black streaks on the veins and terminal series of points from apex to vein 2.

Ab. 1. *uniformis*. Paler; palpi slightly tinged with fuscous at sides; fore wing with an ochreous tinge.—Syria, W. Turkestan, Beluchistan.

Hab. Britain; France, Sand and Leech Colls.; Germany, Zeller, Frey, and Leech Colls.; Austria; Hungary; Switzerland, Frey Coll.; Italy, Capri (*C. S. Browne*); Dalmatia, Leech Coll.; Algeria; Russia, Livonia; Armenia; Asia Minor, Pontus, Lydia; Syria; W. Turkestan, Turcomania, Syr Daria, 1 ♂, 1 ♀,

Ferghana, Sarawshan, Issyk Kul; Beluchistan, Quetta (*Swinhoe*), 1 ♀ type *uniformis*. *Exp.* 30–38 millim.

Larva. Barrett, Lep. Brit. v. p. 284, pl. 221. f. 1; Kirby, Butt. & Moths Eur. p. 174; Hffm. Raup. p. 110, pl. 30. f. 6.

Brownish grey finely shaded with blackish; dorsal and subdorsal lines fine, pale; lateral line black with oblique black streaks above it. Food-plants: *Plantago, Taraxicum*, &c. 5.

3943. Athetis superstes.

Noctua blanda, Hübn. Eur. Schmett., Noct. f. 162 (1802), nec Schiff.
Caradrina superstes, Treit. Schmett. Eur. v. (2) p. 260 (1825); Frr. Neue Beitr. pl. 190; Herr.-Schaff. Eur. Schmett., Noct. f. 382; Staud. Cat. Lep. pal. p. 197.

Head and thorax whitish faintly tinged with rufous and irrorated with dark brown; palpi with the 1st and 2nd joints black at sides; tarsi blackish with slight pale rings; abdomen whitish irrorated with brown, the lateral tufts pale rufous. Fore wing whitish slightly tinged with rufous except towards base, and irrorated with black; subbasal line slight, black, waved, from costa to submedian fold; antemedial line indistinct, blackish with small spot at costa, oblique, waved, angled inwards to black points on median nervure and vein 1; orbicular and reniform well-developed, brownish defined by white, the former rather elliptical; an indistinct diffused incurved line from lower angle of cell to inner margin; postmedial line black with small spot at costa, bent outwards below costa, then dentate and produced to black points on the veins, incurved below vein 4; subterminal line whitish slightly defined by brown on inner side, excurved below vein 7 and at middle and incurved at submedian fold, a terminal series of black points; cilia with a fine whitish line at middle. Hind wing whitish, the veins and terminal area tinged with brown; a terminal series of dark points and the cilia with a brownish line through them from apex to vein 2; the underside with the costal area irrorated with brown, a slight sinuous subterminal line from costa to discal fold.

Hab. Germany, Zeller and Frey Colls.; Austria; Hungary, Leech Coll.; Switzerland, Valais, Frey and Leech Colls.; Spain, Castille; Italy; Russia, Sarepta (*Christoph*); Armenia; Asia Minor, Pontus. *Exp.* 30–36 millim.

Larva. Kirby, Butt. & Moths Eur. p. 174; Hffm. Raup. p. 110, pl. 30. f. 5.

Grey, with a dark dorsal line, pale lateral stripes and oblique streaks between them; head brown. Food-plants: Low growing herbs. 5–6.

3944. Athetis respersa.

Noctua respersa, Schiff. Wien. Verz. p. 314 (1776); Hübn. Eur. Schmett., Noct. f. 164; Dup. Lép. Fr. vi. p. 78, pl. 77. f. 5; Frr. Neue Beitr. i. pl. 94; Staud. Cat. Lep. pal. p. 197.

Head white; palpi black, white at tips; antennæ fuscous except

at base; thorax whitish irrorated with brown; tarsi blackish; abdomen white tinged with brown. Fore wing grey-white tinged with brown and irrorated with fuscous; subbasal line represented by black points on costa and median nervure; antemedial line indistinct with series of black points on it and small spot at costa, oblique, minutely waved, angled inwards on vein 1; orbicular a slight brownish spot; the reniform a small brown lunule; an incurved brown shade from lower angle of cell to inner margin; postmedial line with black spot at costa, bent outwards below costa, then dentate and produced to black points on the veins, excurved to vein 4, then incurved; a slight brown subterminal line excurved below vein 7 and at middle; a terminal series of black points. Hind wing whitish suffused with reddish brown, the cilia paler; the underside white irrorated with brown, especially on costal and terminal areas, a small discoidal spot, postmedial series of minute streaks on the veins, and terminal series of small black lunules from apex to vein 2.

Hab. France; Germany, Zeller and Leech Colls.; Austria, Zeller and Frey Colls.; Hungary; Switzerland; N. Italy; Balkan States; Russia, Livonia; Armenia; Asia Minor, Bithynia. *Exp.* 34–36 millim.

Larva. Kirby, Butt. & Moths Eur. p. 174; Hffm. Raup. p. 109, pl. 30. f. 3.

Dark brown with a paler dorsal stripe edged by the whitish subdorsal lines; laterally suffused with blackish and with two whitish spots on each somite. Food-plants: Grasses, &c., hibernating under stones. 10–5.

3945. Athetis leucosticta, n. sp. (Plate CXXIX. fig. 26.)

♀. Head and thorax reddish brown slightly mixed with grey; palpi dark brown mixed with white, the terminal joint rather long; antennæ ringed with white towards base; tarsi blackish ringed with white; abdomen dark brown mixed with whitish and with dark segmental lines. Fore wing reddish brown suffused and irrorated with fuscous and a few white scales, the ante- and postmedial areas somewhat darker; subbasal line indistinct, slightly defined by whitish on outer side, waved, from costa to submedian fold; antemedial line black defined by whitish on inner side towards costa, erect, waved, slightly angled outwards below costa; orbicular an obscure dark spot; reniform an obscure dark mark with small white spot at its upper extremity; a dark medial shade, oblique from costa to lower angle of cell; postmedial line black, slightly defined by whitish on outer side towards costa, bent outward below costa, then minutely dentate and produced to slight white points on the veins, somewhat angled inwards at discal fold and incurved below vein 4, some white points beyond it on costa; subterminal line represented by a series of yellowish-white points and a spot above tornus, defined by brown on inner side, excurved below vein 7 and at middle; a fine black terminal line with white

points at the veins. Hind wing greyish brown; a dark terminal line; cilia with a fine whitish line at base; the underside whitish strongly irrorated with dark brown, a large brown discoidal lunule, postmedial line from costa to vein 4 and terminal series of black striæ.

Ab. 1. Fore wing with the white spot only and not the points on subterminal line.

Hab. Br. E. Africa, Masailand, E. Quaso (*Betton*), 1 ♀ type, Ndimu (*Betton*), 1 ♀. *Exp.* 26 millim.

3946. **Athetis interstincta.** (Plate CXXIX. fig. 27.)

Graphiphora interstincta, Moore, Lep. Atk. p. 118 (1882); Hmpsn. Moths Ind. ii. p. 267.

Head and thorax red-brown mixed with grey, the head paler; palpi black-brown, greyish at tips; tarsi fuscous with pale rings; abdomen dark reddish brown. Fore wing deep red-brown slightly tinged with grey and with slight dark irroration; subbasal line black, curved, from costa to submedian fold; antemedial line black, bent inwards to costa and excurved above inner margin; orbicular a black point; reniform chocolate-brown, rather constricted at middle, with a white point at upper extremity and two at lower; a diffused dark medial line, oblique from costa to lower angle of cell and angled inwards below the cell; postmedial line black, slightly bent outwards below costa, then with black points beyond it on the veins, excurved to vein 4, then oblique; subterminal line faint, pale, defined on inner side by red-brown, excurved below vein 7 and at middle; a terminal series of minute dark lunules; a fine whitish line at base of cilia. Hind wing reddish brown tinged with grey, a fine whitish line at base of cilia; the underside whitish tinged with brown and irrorated with dark brown, a black discoidal spot, diffused curved postmedial line, and terminal series of small black lunules from apex to vein 2.

Hab. Sikhim (*Russell*), 1 ♂, 3 ♀ type; Bhután (*Dudgeon*), 1 ♀. *Exp.* 36–40 millim.

3947. **Athetis longiciliata**, n. sp. (Plate CXXIX. fig. 28.)

♂. Head and thorax rufous mixed with a few dark brown scales; palpi black at sides except at extremities of 2nd and 3rd joints; tarsi fuscous with pale rings; abdomen pale rufous suffused with fuscous except the anal tuft. Fore wing rufous tinged with grey and slightly irrorated with brown; subbasal line blackish, angled outwards below costa and ending at submedian fold; antemedial line blackish, oblique to vein 1, then erect; orbicular a blackish point; reniform a narrow lunule defined by diffused rufous, and with slight whitish points round it; medial line brown, rather diffused, oblique from costa to lower angle of cell, then inwardly oblique and sinuous; postmedial line brown, excurved from costa to vein 4, then oblique, with traces of a series of dark points

beyond it on the veins; subterminal line yellowish, defined on inner side by brown suffusion, slightly excurved below vein 7 and at middle; a terminal series of black points; cilia with a fine yellowish line at base. Hind wing red-brown tinged with fuscous; a diffused blackish discoidal spot; a terminal series of slight dark lunules; cilia with a fine yellowish line at base; the underside whitish irrorated with dark brown, a black discoidal spot, rather diffused curved brown postmedial line, and terminal series of small black lunules from apex to vein 2.

Antennæ with the cilia rather long.

Hab. Assam, Khásis, 1 ♂ type. *Exp.* 36 millim.

3948. Athetis fasciata. (Plate CXXIX. fig. 29.)

Graphiphora fasciata, Moore, P. Z. S. 1867, p. 54; Hmpsn. Moths Ind. ii. p. 267.

Head, thorax, and abdomen pale rufous; palpi black-brown except at tips; antennæ black-brown; tarsi with pale rings. Fore wing pale rufous, the terminal area deep rufous; subbasal line black, waved, from costa to submedian fold; antemedial line black, slightly angled outwards below costa, then oblique and angled inwards to black points on median nervure and vein 1; orbicular a black point; reniform chocolate-brown, elliptical, with white point on inner side below, one at upper extremity and two at lower; a diffused brown medial shade, oblique from costa to reniform, then sinuous; postmedial line black, double at costa, slightly bent outwards below costa, then dentate and produced to black points on the veins, evenly curved; subterminal line yellowish defined on inner side by red-brown suffusion, excurved below vein 7 and at middle; a terminal series of minute dark points; a fine yellow line at base of cilia which are dark brown. Hind wing reddish brown with an ochreous tinge, the cilia rather paler; the underside whitish tinged with red-brown, the costal and terminal areas irrorated with red-brown, a blackish discoidal lunule, rather diffused sinuous postmedial line, and terminal series of small black lunules from apex to vein 2.

Ab. 1. Fore wing with the ground-colour grey suffused with brown, without rufous tinge.

Hab. Sikhim (*Atkinson*, *Lidderdale*, *Dudgeon*), 7 ♂, 4 ♀ type; Bombay; Madras, Belgaum (*Watson*), 1 ♀. *Exp.* 34–42 millim.

3949. Athetis satellitia. (Plate CXXIX. fig. 30.)

Caradrina satellitia, Hmpsn. Ann. S. Afr. Mus. ii. p. 302 (1902).

Head white slightly tinged with rufous; antennæ black ringed with white, the basal joint white; thorax pale rufous; tarsi fuscous ringed with white; abdomen pale rufous slightly irrorated with brown. Fore wing pale rufous slightly irrorated with brown;

subbasal line slight, defined by whitish on outer side, from costa to submedian fold; antemedial line slight, black, with white point before it at costa, oblique, waved; orbicular a minute white point; reniform a small round white spot with point above it and two below it; traces of a sinuous medial line, oblique from costa to lower angle of cell; postmedial line slight, black, with white point at costa, bent outwards below costa, then minutely dentate and produced to points on the veins, incurved below vein 4; subterminal line faintly defined by brown on inner side, excurved below vein 7 and at middle; a terminal series of black points with white points on their inner side. Hind wing whitish tinged with red-brown especially on the veins and terminal area; cilia white, brown at apex and at base to vein 2; the underside white, the costal area irrorated with red-brown, the apical area suffused with red-brown to discal fold, a slight discoidal spot.

Hab. Mozambique, Delagoa Bay (*Junod*), 1 ♀; Natal, Victoria Distr. (*Gooch*), 1 ♀ type, Durban (*Bowker*, *Leigh*), 1 ♂, 2 ♀. *Exp.* 30–34 millim.

3950. **Athetis conformis.** (Plate CXXIX. fig. 31.)

Caradrina conformis, Wlk. x. 298 (1856).

♀. Head and thorax pale grey-brown mixed with white, the head whiter; palpi fuscous brown, whitish at tips; tarsi fuscous ringed with whitish; abdomen whitish mixed with brown. Fore wing pale brown irrorated with white and a few dark brown scales; subbasal line dark, oblique, from costa to submedian fold; antemedial line dark, oblique, slightly angled outwards below costa and inwards on vein 1; orbicular a minute black point; reniform only defined by faint white points; a rather diffused dark medial line, oblique from costa to lower angle of cell, then erect; postmedial line indistinct, dark, slightly bent outwards below costa, then minutely dentate, excurved to vein 4, then incurved; subterminal line whitish defined by dark brown on inner side, very slightly excurved below vein 7 and at middle. Hind wing whitish suffused with brown; the underside whitish tinged with brown, the costal and terminal areas irrorated with brown, a dark discoidal spot and indistinct curved postmedial line.

Hab. ignotus, 1 ♀ type. *Exp.* 34 millim.

3951. **Athetis pulmonaris.**

Noctua pulmonaris, Esp. Schmett. iv. pl. 151. f. 5 (1790); Frr. Neue Beitr. pl. 215; Staud. Cat. Lep. pal. p. 198.
Noctua fuscago, Esp. Schmett. iv. pl. 176. ff. 5, 6 (1791).
Noctua pulmonariæ, Hübn. Eur. Schmett., Noct. f. 98 (1802).

Head, thorax, and abdomen yellow mixed with rufous; palpi

brownish at sides, whitish at tips; tarsi brownish with pale rings. Fore wing yellow suffused with rufous; subbasal line indistinctly double filled in with whitish, curved, from costa to submedian fold; antemedial line brown defined by whitish on inner side, slightly angled inwards at subcostal and median nervures and vein 1, and excurved in submedian interspace and above inner margin; orbicular with faint whitish annulus defined by brown, round; reniform brown with whitish annulus to lower part defined by brown; a diffused brown medial line, oblique from costa to reniform, inwardly oblique from lower angle of cell to inner margin; postmedial line double filled in with pale yellowish, bent outwards below costa, then very minutely waved, excurved to vein 4, then incurved, some whitish points beyond it on costa: subterminal line yellowish, slightly defined on inner side by brown and with brown patch before it at costa, oblique towards costa, then minutely dentate, excurved below vein 7 and at middle, then incurved; a brown terminal line; a slight pale line at base of cilia. Hind wing yellowish suffused with red-brown; a fine brown terminal line; cilia whitish with a red-brown line near base; the underside whitish, the costal area tinged with ochreous, a small brown discoidal spot, postmedial line excurved to vein 4, then oblique, and traces of a diffused subterminal band.

Hab. France, Sand Coll.; Germany, Zeller Coll.; Austria, Leech Coll., Galicia; Hungary, Frey and Leech Colls.; Italy; Greece. *Exp.* 36–42 millim.

Larva. Kirby, Butt. & Moths Eur. p. 174; Hffm. Raup. p. 109, pl. 30. f. 2. Dull green with a whitish dorsal line; head yellowish brown. Food-plant, *Pulmonaria*. 5.

3952. Athetis flava.

Caradrina flava, Oberth. Ét. Ent. i. p. 45, pl. 4. f. 3 (1876); Staud. Cat. Lep. pal. p. 196.

Head and thorax reddish yellow irrorated with a few black scales, the head whiter; palpi blackish at base; tarsi fuscous with pale rings; abdomen white with obscure brown dorsal bands. Fore wing reddish yellow slightly irrorated with fuscous; subbasal line represented by a small black spot on costa; antemedial line indistinct, double, the lines widely separated, with a black spot on outer line at costa, oblique, very minutely waved; orbicular and reniform very small, reddish brown with some white points round them, the former round; an indistinct medial line with black spot at costa, oblique from costa to reniform, incurved below the cell and angled outwards on vein 1; postmedial line indistinct, double, the lines widely separated and with black spot on inner line at costa, slightly bent outwards below costa, then minutely waved, incurved below vein 4, some pale points beyond it on costa; subterminal line indistinct, pale with slight dark suffusion on inner side, somewhat excurved below vein 7 and at middle; a terminal series of slight dark striæ; cilia

with a slight brown line through them. Hind wing white, the veins and termen slightly tinged with pale brown.

Hab. Algeria (*Mrs. Nicholl*), 1 ♂; Canaries, Guimar (*Walsingham*), 1 ♂; Palestine; Persian Gulf, Fao (*Cumming*), 3 ♀. *Exp.* 34 millim.

3953. **Athetis fusca.** (Plate CXXIX. fig. 32.)

Caradrina fusca, Leech, Trans. Ent. Soc. 1900, p. 118.

♀. Head and thorax grey mixed with fuscous brown; palpi black, whitish at tips; tarsi fuscous with pale rings; abdomen grey-brown. Fore wing grey almost entirely suffused with fuscous brown; subbasal line slight, blackish defined by grey on outer side, sinuous, from costa to vein 1; antemedial line slight, blackish defined by grey on inner side and with black point at costa, oblique, minutely waved; orbicular absent; reniform a faint fuscous lunule with slight pale points on inner and outer sides above and below; an indistinct dark medial shade, oblique from costa to lower angle of cell; postmedial line slight, dark, defined by grey on outer side, bent outwards below costa, then minutely dentate, oblique below vein 4; subterminal line faintly defined by brown suffusion on inner side, slightly waved; a fine dark terminal line; cilia with whitish line at base. Hind wing whitish suffused with brown; a fine dark terminal line; cilia white at base, brown at tips; the underside grey, the costal area irrorated with brown, a small discoidal spot and indistinct curved postmedial line.

Hab. W. China, Nitou, 1 ♀, Ta-chien-lu (*Pratt*), 1 ♀ type. *Exp.* 36 millim.

3954. **Athetis morosa.** (Plate CXXX. fig. 1.)

Caradrina morosa, Led. Verh. zool.-bot. Ges. Wien, 1853, p. 373, pl. 5. f. 3; Staud. Cat. Lep. pal. p. 195.

♂. Head and thorax white tinged with ochreous brown; palpi black, white at tips; antennæ blackish; tarsi black ringed with white; abdomen whitish tinged with brown. Fore wing whitish tinged with ochreous brown and slightly irrorated with fuscous; subbasal line slight with black spot at costa, ending at vein 1; antemedial line indistinct, double, with black spot on the outer line at costa, oblique, waved; orbicular absent; reniform a blackish lunule with white point on inner side below and two on outer; a dark medial shade with black spot at costa, oblique from costa to lower angle of cell, then incurved; postmedial line blackish with black spot at costa, slightly bent outwards below costa, then minutely dentate, incurved below vein 4, an indistinct curved line beyond it, the area beyond it suffused with fuscous, with some pale points on costa, defining the minutely waved whitish

subterminal line which is excurved below vein 7 and at middle; a terminal series of slight black lunules. Hind wing white tinged with brown especially on the veins and terminal half from costa to vein 2; cilia pure white; the underside white, the costal area irrorated with brown, a small discoidal spot and traces of a curved postmedial line.

Hab. W. Siberia, Altai, 1 ♂; Mongolia, Uliassutai; E. Siberia, Amurland, Ussuri. *Exp.* 38 millim.

3955. Athetis rebeli. (Plate CXXX. fig. 2.)

Caradrina flavirena, Rebel, Ann. Nat. Hofmus. Wien, ix. p. 59 & xiii. p. 366 (nec Guen.).
Caradrina rebeli, Staud. Cat. Lep. pal. p. 196 (1901).

♂. Head and thorax grey tinged with brown; palpi black, white at tips; antennæ blackish; tarsi fuscous with pale rings; abdomen grey dorsally suffused with fuscous brown, ventrally whitish. Fore wing grey slightly irrorated with brown; subbasal line represented by small black spots below costa and cell; antemedial line indistinct, oblique, sinuous, with small black spots at costa and submedian fold; orbicular a small round blackish spot; reniform a rather diffused blackish lunule with some whitish points round it; a small black spot at middle of costa; postmedial line indistinct, blackish, interrupted, with black spot at costa, bent outwards below costa, then minutely waved, incurved below vein 4, some whitish points with slight black streaks between them beyond it on costa; subterminal line whitish defined by fuscous on inner side, excurved below vein 7 and at middle and angled inwards at discal and submedian folds; the terminal area slightly tinged with brown; a terminal series of black striæ; a fine whitish line at base of cilia. Hind wing greyish suffused with brown, a fine white line at base of cilia; the underside whitish tinged with brown, the costal area irrorated with brown, a black discoidal lunule, postmedial series of short streaks on the veins, and terminal series of small lunules.

♀. Uniformly suffused with fuscous.

Hab. Canaries, Teneriffe (*W. White*), 4 ♂, 1 ♀, Guimar (*Walsingham*), 5 ♂, 3 ♀. *Exp.* 28–32 millim.

3956. Athetis rougemonti.

Caradrina rougemonti, Spüler, Schmett. Eur. p. 231, pl. 29. f. 32 (1906).

Head white; palpi black, white at tips; antennæ fuscous except at base; thorax grey; tarsi blackish ringed with white; abdomen white slightly mixed with grey. Fore wing white suffused with grey and with slight dark irroration; subbasal line represented by a black point on costa; antemedial line very indistinct, oblique, minutely waved, with black spot at costa;

orbicular a small round fuscous spot slightly defined by white; reniform a fuscous lunule surrounded by white points; faint traces of a medial line with fuscous point at costa; postmedial line very indistinct, with small black spot at costa, bent outwards below costa, then minutely dentate, incurved below vein 4, some whitish points beyond it on costa; subterminal line represented by a series of minute white lunules defined on inner side by slight rufous marks, somewhat angled outwards at vein 7; a terminal series of minute black lunules slightly defined by whitish on inner side. Hind wing pure white; the underside with the costal area slightly irrorated with grey, a terminal series of small black lunules from apex to vein 2.

Hab. S. France, Digne, 1 ♂, 1 ♀; Switzerland, Zermatt, 1 ♂, 1 ♀. *Exp.* 32–36 millim.

Larva. Ochreous grey mottled and striated with brown except on ventral surface; dorsal line slight, pale; subdorsal line dark-edged below; stigmatal line slight, dark, the stigmata black; head brown.

3957. Athetis jurassica.

Caradrina jurassica, Riggenbach, Mitth. Schweiz. Ent. Ges. iv. p. 607 (1877); Mill. Ann. Soc. Linn. Lyons, 1878, pl. 155. f. 9; Staud. Cat. Lep. pal. p. 196.

♂. Head and thorax white slightly tinged with brown; palpi black, white at tips; antennæ blackish except at base; tarsi blackish with pale rings; abdomen white mixed with reddish brown. Fore wing white tinged with reddish brown except towards base and slightly irrorated with fuscous; subbasal line black with small spot at costa, waved, from costa to submedian fold; antemedial line blackish with black spot at costa and point at submedian fold, oblique, rather irregular, angled inwards at vein 1 and bent inwards to inner margin; orbicular a dark point; reniform faintly defined by brown and with traces of pale points round it; a dark medial line with small black spot at costa, excurved to below cell, then slightly waved; postmedial line dark with black spot at costa, slightly bent outwards below costa, then minutely dentate, excurved to vein 4, then incurved and angled inwards at vein 1; subterminal line indistinct, pale, defined on inner side by slight dentate rufous marks, excurved below vein 7 and at middle; a terminal series of black points. Hind wing white, the terminal area tinged with reddish brown from apex to submedian fold; the underside with the costal area irrorated with brown, a discoidal point, rather diffused curved postmedial line from costa to submedian fold with minute dark streaks on the veins, and terminal series of minute black lunules from apex to vein 2.

Hab. Switzerland, Jura, Œningen, 2 ♂, Frey Coll. *Exp.* 32 millim.

3958. Athetis selini.

Caradrina selini, Boisd. Gen. & Ind. Meth. p. 137 (1840); Dup. Lép. Fr., Suppl. iii. p. 576, pl. 48. f. 3; Herr.-Schäff. Eur. Schmett., Noct. f. 91; Staud. Cat. Lep. pal. p. 196.

Head and thorax whitish tinged with red-brown; palpi black, white at tips; antennæ blackish except at base; tarsi black ringed with white; abdomen whitish suffused with red-brown. Fore wing whitish thickly irrorated with purplish red-brown, the terminal half suffused with red-brown; subbasal line black with black spot at costa, then oblique and ending at submedian fold; antemedial line very indistinct with black spot at costa and point in submedian fold, oblique, sinuous; orbicular absent; reniform a brownish lunule with two white points on inner edge and three on outer with small yellow mark at middle of outer side; medial line brownish with black spot at costa, excurved to below cell and slightly angled outwards at vein 1; postmedial line very indistinct with black spot at costa, bent outwards below costa, then minutely dentate, excurved to vein 4, then oblique; subterminal line indistinct, grey defined on inner side by rufous, minutely waved, excurved below vein 7 and at middle; a terminal series of blackish points. Hind wing white, the veins of terminal half and the terminal area from apex to submedian fold suffused with reddish brown; the underside with the costal area irrorated with brown, a blackish discoidal point, postmedial series of minute streaks on the veins, and terminal series of small lunules from apex to vein 2.

Hab. S. France, Nice, Leech Coll., Midi, Leech Coll.; Germany, Pomerania, Silesia, Frankfort, Zeller Coll.; Hungary, Frey and Leech Colls.; Switzerland, Valais, Teruel; Spain, Castille, Andalusia; Corsica; Italy; Sicily, Zeller Coll.; Dalmatia; Greece; Russia, Livonia, Leech Coll., Sarepta, Leech Coll.; Asia Minor, Pontus, Taurus; Syria. *Exp.* 24–34 millim.

3959. Athetis flavirena.

Caradrina flavirena, Guen. Noct. i. p. 250 (1852); Staud. Cat. Lep. pal. p. 196.
Caradrina noctivaga, Bell. Ann. Soc. Ent. Fr. 1863, p. 420, pl. 9. f. 4.
Caradrina infusca, Const. Ann. Soc. Ent. Fr. 1865, p. 194, pl. 7. ff. 10 *a*, *b* (nec Rmbr.).
Caradrina minor, Kalchb. Iris, x. p. 176 (1897).

Head and thorax ochreous brown suffused with grey; palpi black, white at tips; tarsi blackish ringed with white; abdomen ochreous white irrorated with brown. Fore wing ochreous brown suffused with grey; subbasal line black, waved, from costa to submedian fold, a black point beyond it in cell; antemedial line with a small black spot on costa, oblique, waved; orbicular a small round brown spot defined by whitish scales; reniform

brown with white points round it and a small yellow spot at middle of outer edge; a small black spot at middle of costa; postmedial line with small black spot at costa, bent outwards below costa, then dentate, incurved below vein 4; subterminal line formed of ochreous points defined on inner side by minute dentate rufous marks, angled outwards at vein 7 and excurved at middle; a terminal series of slight black lunules. Hind wing white, the veins, costal area and terminal area to vein 2 suffused with brown; cilia with a brownish line through them from apex to vein 2; the underside with the costal area irrorated with brown, a small discoidal spot, postmedial series of short streaks on the veins, and terminal series of small lunules.

Ab. 1. *minor*. Smaller. Gen. æst.—Centr. & S. Italy.

Ab. 2. *infusca*. Fore wing of male with the terminal area suffused with fuscous, of female wholly suffused.

Ab. 3. Rather greyer.—Switzerland, Valais.

Hab. S. France, Nice, D'Emmick & Leech Colls.; Austria, Tirol; Spain, Catalonia, Castile; Centr. Italy; Sicily, Zeller Coll.; Asia Minor, Pontus; Palestine, Jordan R. *Exp.* 16–32 millim.

*3960. Athetis wullschlegeli. (Plate CXXIX. fig. 3.)

Caradrina wullschlegeli, Püng. Soc. Ent. xvii. p. 145 (1903).

Head whitish mixed with grey-brown on vertex; palpi deep black, the extremity of 2nd joint white, the 3rd joint white with black point at side; frons with some brown at sides; antennæ black; thorax brown mixed with grey; tarsi blackish ringed with white; abdomen whitish mixed with brown. Fore wing brown mixed with grey; subbasal line blackish, from costa to submedian fold, a blackish point beyond it in cell; antemedial line blackish with small black spot at costa, oblique, minutely waved; orbicular a small round black spot; reniform blackish defined by a few whitish scales and with a slight whitish point below on inner side and two on outer, constricted at middle; a blackish spot on middle of costa and an oblique diffused incurved line from lower angle of cell to inner margin; postmedial line blackish defined by grey on outer side and with black spot at costa, bent outwards below costa, then dentate and produced to blackish points on the veins, incurved below vein 4, some slight pale striæ beyond it from costa; subterminal line pale, slightly defined on inner side by fuscous, excurved below vein 7, excurved and waved at middle and ending on termen at vein 1; a terminal series of black points; a fine pale line at base of cilia. Hind wing white, the costal area and terminal area to vein 2 suffused with brown, wholly suffused with brown in female; a slight discoidal spot; cilia white with brown line through them from apex to vein 2, the tips wholly brown at apex; the underside white, the costal and terminal areas irrorated with brown, a small discoidal spot, diffused sinuous

postmedial line with minute black streaks at the veins, and terminal series of black points from apex to vein 2.

Hab. Switzerland, Zermatt, types † ♂ ♀ in Coll. Püngeler. *Exp.* ♂ 34, ♀ 30 millim.

3961. Athetis selinoides.

Caradrina selinoides, Bell. Ann. Soc. Ent. Fr. 1862, p. 379, pl. 9. f. 1; Staud. Cat. Lep. pal. p. 196.

♂. Head and thorax white tinged with brown and slightly irrorated with fuscous; palpi black, white at tips; antennæ blackish except at base; tarsi blackish ringed with white; abdomen grey suffused with brown. Fore wing grey-white tinged with brown, except on costal area, and irrorated with fuscous; subbasal line black, waved, from costa to submedian fold; antemedial line black with small spot at costa, minutely waved and slightly oblique; orbicular a slight dark point; reniform a dark lunule with white point on inner side at lower extremity and two on outer; a rather diffused dark medial line oblique from costa to reniform and sinuous from cell to inner margin; postmedial line black with small spot at costa, slightly bent outwards below costa, then dentate, incurved below vein 4; subterminal line defined by brown on inner side, minutely dentate, angled outwards at vein 7 and slightly excurved at middle, a terminal series of small black lunules. Hind wing white tinged with brown, the terminal area suffused with brown; cilia white with a dark line near base; the underside with the costal area irrorated with brown, a blackish discoidal point, diffused curved subterminal band, and terminal series of small black lunules.

Hab. Corsica (*Yerbury*), 1 ♂. *Exp.* 34 millim.

3962. Athetis menetriesi.

Caradrina menetriesii, Kretschmar, Berl. ent. Zeit. 1863, p. 432, pl. 2. f. 7; Staud. Cat. Lep. pal. p. 197.
Caradrina montana, Brem. Lep. Ost-Sib. p. 49, pl. 4. f. 8 (1864).
Caradrina petræa, Tengstr. Ac. Soc. Flor. & Faun. Fenn. vii. p. 356 (1870).

Head white with a few brown scales; palpi black, white at tips; antennæ black except at base; thorax grey-white slightly mixed with brown; tarsi blackish ringed with white. Fore wing pale grey sparsely irrorated with black; subbasal line represented by a black striga from costa; antemedial line hardly traceable, double, oblique, sinuous, with small black spots at costa and submedian fold; orbicular a small black spot; reniform a narrow lunule slightly defined by black; a small black spot at middle of costa and traces of a sinuous line from lower angle of cell to inner margin; postmedial line black, interrupted, with small spot at costa, bent outwards below costa, then minutely dentate, slightly angled inwards at discal fold and incurved below vein 4, some white points beyond it on costa; subterminal line represented by a series of

slight white striæ defined on inner side by small dentate black marks, somewhat excurved below vein 7 and at middle and incurved at submedian fold; a terminal series of minute black lunules. Hind wing white, the terminal area slightly irrorated with brown; a blackish discoidal point and terminal series of striæ from apex to vein 2; the underside with the costal and terminal areas irrorated with brown, a small black discoidal spot and indistinct diffused curved subterminal line.

Hab. Sweden; Russia, Finland, 2 ♂, 2 ♀, Livonia; W. Turkestan, Issyk Kul; W. Siberia, Altai; Mongolia, Uliassutai, Changai Mts.; E. Siberia, Dahuria, Amurland, Ussuri. *Exp.* 34 millim.

3963. Athetis bremusa. (Plate CXXXIX. fig. 4.)

Caradrina bremusa, Swinh. P. Z. S. 1885, p. 451; Hmpsn. Moths Ind. ii. p. 260.

Head and thorax whitish mixed with brown; palpi black, white at tips; antennæ blackish; tarsi blackish slightly ringed with white; abdomen whitish irrorated with fuscous. Fore wing whitish tinged with brown and irrorated with black, the terminal area suffused with fuscous; subbasal line black, curved, from costa to submedian fold; antemedial line black, oblique and minutely waved from costa to subcostal nervure, then reduced to black points on the veins; orbicular a black point; reniform blackish defined by some white scales, constricted at middle and with ochreous point on its outer edge; traces of a waved medial line with blackish mark at costa; postmedial line slight, with small black spot at costa, slightly bent outwards below costa, then dentate and produced to black points on the veins, excurved to vein 4, then incurved; subterminal line indistinct, pale, defined on inner side by black forming small dentate marks and a spot at discal fold, minutely waved, excurved below vein 7 and at middle, a terminal series of black points slightly defined by greyish on inner side. Hind wing whitish tinged with brown, especially on the veins and terminal area; cilia whitish with a slight brown line near base; the underside white, the costal area irrorated with brown, a slight discoidal lunule and postmedial series of points on the veins from costa to vein 3.

Hab. Punjab, Simla (*Harford*), 1 ♀, Cawnpore (*Betton*), 1 ♂; Bombay, Poona (*Swinhoe*), 1 ♂ type; Madras, Belgaum (*Watson*), 1 ♂, Gooty (*Campbell*), 1 ♂, Nilgiris (*Hampson*), 2 ♀; Ceylon, Puttalam (*Pole*), 1 ♀; Burma, Hsipaw (*de Nicéville*), 1 ♀. *Exp.* 28–30 millim.

3964. Athetis multifera. (Plate CXXX. fig. 5.)

Caradrina multifera, Wlk. x. 293 (1856); Smith, Cat. Noct. N. Am. p. 196.
Segetia fidicularia, Morr. Proc. Bost. Soc. N. H. xvii. p. 145 (1874).

Head and thorax grey-white slightly irrorated with black; palpi

black, white at tips; antennæ black except at base; tarsi black ringed with white; abdomen white slightly irrorated with brown. Fore wing pale grey irrorated with black; subbasal line black, from costa to submedian fold; antemedial line black with small spot at costa, oblique, waved, angled inwards on vein 1; orbicular a small black spot; reniform a blackish lunule surrounded by white points and with slight rufous mark on outer edge; medial line blackish with small spot at costa, oblique to reniform and incurved below the cell; postmedial line with black spot at costa, bent outwards below costa, then dentate, incurved at discal fold and below vein 4, some white points beyond it on costa; subterminal line whitish defined on inner side by small dentate rufous marks between veins 7 and 2, minutely waved, excurved below vein 7 and at middle; a terminal series of small black spots. Hind wing white tinged with brown, especially on the veins and terminal area; cilia white; the underside with the costal area irrorated with brown, a blackish discoidal spot, waved postmedial line from costa to vein 5, and terminal series of small lunules from apex to vein 2.

Hab. Canada (*Norman*), 1 ♂, 1 ♀, Nova Scotia (*Redman*), 2 ♀ type; U.S.A., 1 ♂, 1 ♀, Maine, New York, New Jersey, Distr. of Columbia, Illinois, Minnesota. *Exp.* 32–34 millim.

3965. **Athetis himaleyica.** (Plate CXXX. fig. 6.)

Caradrina himaleyica, Koll. Hügel's Kaschmir, iv. p. 479 (1844); Hmpsn. Moths Ind. ii. p. 260.
Caradrina arenacea, Moore, P. Z. S. 1881, p. 349.

Head, thorax, and abdomen grey-white slightly irrorated with brown; palpi black, white at tips; antennæ blackish except at base; tarsi black ringed with white. Fore wing grey-white slightly tinged and irrorated with brown; subbasal line represented by a small black spot on costa; antemedial line indistinct, double, minutely waved, oblique, with black spot on the outer line at costa; orbicular a brownish point; reniform a narrow lunule defined by rufous, with some fuscous at lower extremity, two white points on inner edge and three on outer and a rufous point beyond it at middle; medial line with black spot at costa, oblique to the reniform and sinuous from lower angle of cell to inner margin; postmedial line indistinct, with black spot at costa, bent outward below costa, then minutely waved and with some black points beyond it on the veins, incurved below vein 4, some white points with slight black streaks between them beyond it on costa; subterminal line whitish defined on inner side by small somewhat dentate rufous marks, angled outward at vein 7 and excurved at middle; the terminal area suffused with fuscous; a terminal series of minute black lunules; cilia with a fine whitish line at base. Hind wing white slightly tinged with reddish brown, especially on the veins and terminal area; cilia white; the underside with the costal and terminal areas irrorated with brown, a small discoidal spot,

postmedial series of minute streaks on the veins, and terminal series of small black lunules.

Hab. W. China, Pu-tsu-fang, 1 ♂; Kashmir, Goorais Valley (*Leech*), 1 ♂, 2 ♀, Scinde Valley (*Leech*), 1 ♂; Punjab, Kulu, 1 ♂, Dalhousie (*Harford*), 1 ♀, Dharmsála (*Hocking*), 3 ♂, 3 ♀, Umballa; Sikhim Tibet, Yatong (*Hobson*), 1 ♂, 3 ♀; Sikhim (*Dudgeon*), 2 ♀ type *arenacea*. *Exp.* 32–36 millim.

3966. Athetis chinensis. (Plate CXXX. fig. 7.)

Caradrina chinensis, Leech, Trans. Ent. Soc. 1900, p. 117.

Head and thorax grey-white tinged with brown; palpi black, white at tips; antennæ black; tarsi black ringed with white; abdomen grey dorsally suffused with brown, ventrally irrorated with black, the anal tuft tinged with rufous. Fore wing grey tinged with brown and irrorated with fuscous; subbasal line slight with black spot at costa, oblique, from costa to vein 1; antemedial line slight, with black spot at costa, oblique, waved; orbicular absent; reniform slightly defined by red-brown with a white point above on outer side, below with a white point on inner side and two on outer; an indistinct medial line with black spot at costa, oblique from costa to lower angle of cell, then inwardly oblique; postmedial line black with black spot at costa, bent outwards below costa, then minutely dentate, incurved below vein 4, another faint curved line beyond it; subterminal line grey defined on both sides by fuscous suffusion from costa to vein 2, minutely waved, a terminal series of slight black lunules defined by greyish on inner side. Hind wing whitish tinged with brown, especially on the veins and terminal area; a fine dark terminal line; cilia whitish; the underside grey, the costal area irrorated with fuscous, a blackish discoidal spot and rather diffused sinuous postmedial line.

Hab. W. China, Pu-tsu-fang, 6 ♂, 2 ♀ type, Ta-chien-lu (*Pratt*), 1 ♀. *Exp.* 32–40 millim.

3967. Athetis clavipalpis.

Phalæna clavipalpis, Scop. Ent. Carn. p. 213 (1763).
Noctua quadripunctata, Fabr. Syst. Ent. p. 594 (1775); Staud. Cat. Lep. pal. p. 196.
Noctua cubicularis, Schiff. Wien. Verz. p. 72 (1776); Borkh. Eur. Schmett. iv. p. 212 (1792); Hübn. Eur. Schmett., Noct. f. 417; Dup. Lép. Fr. vi. p. 57, pl. 76. f. 1; Steph. Ill. Brit. Ent., Haust. ii. p. 158.
Phalæna grisea, Rott. Naturf. ix. p. 138 (1776).
Noctua segetum, Esp Schmett. iv. pl. 150. ff. 4, 5 (nec Linn.).
Noctua leucoptera, Thnbg. Disc. Ent. ii. p. 41 (1791); Spängb. Ent. Tidskr. 1880, p. 92, pl. 1. f. 3.
Caradrina laciniosa, Donz. Ann. Soc. Ent. Fr. 1847, p. 529, pl. 8. f. 4.
Caradrina pulverosa, Wlk. x. 295 (1856).
Caradrina milleri, Schulz, Stett. ent. Zeit. 1862, p. 367, pl. 1. ff. 6, *b*, *c*.

Head and thorax grey-white slightly tinged with rufous and irrorated with black; palpi black, whitish at tips; antennæ

blackish except at base; tarsi black ringed with white; abdomen whitish suffused with brown. Fore wing grey tinged with ochreous brown and irrorated with fuscous, the terminal area suffused with fuscous; subbasal line represented by a small black spot on costa and striga from cell; antemedial line indistinct, double, oblique, minutely waved, with small black spots on the outer line at costa and submedian fold; orbicular and reniform small, tinged with fuscous and defined by blackish, the former rounded, the latter a narrow lunule with two white points on its inner edge and three on outer; an indistinct sinuous medial line excurved in cell and with small black spot at costa; postmedial line with small black spot at costa, bent outwards below costa, then dentate, incurved below vein 4, another indistinct line beyond it and some whitish points on costa with slight dark streaks between them; subterminal line indistinct, pale, defined on inner side by small dentate rufous marks, minutely waved, angled outwards at vein 7 and excurved at middle; a terminal series of minute black lunules. Hind wing white, the veins and termen slightly tinged with brown; the underside with the costal area irrorated with brown, a slight discoidal point, postmedial series of minute streaks on the veins and terminal series of small black lunules from apex to vein 2.

Ab. 1. *leucoptera*. Head, thorax, and fore wing suffused with fuscous.—Scandinavia, Finland, Urals.

Hab. Britain, Leech Coll.; France; Denmark, Leech Coll.; Germany, Zeller & Leech Colls.; Austria, Frey Coll., Tirol (*Hampson*); Hungary, Leech Coll.; Switzerland, Frey Coll.; Spain; Italy, Savoy (*Hampson*), Capri (*Brown*); Greece; Algeria, Biskra (*Walsingham*), 2 ♀, Khenchela (*Walsingham*), 1 ♂; Madeira (*Wollaston*), 1 ♀; Balkan States; Scandinavia, Söndmore, Zeller Coll., Surendal (*Christy*); Russia, Livonia, Zeller Coll.; Egypt, Cairo (*Graves*), 1 ♂; Asia Minor, Pontus, Bithynia, Amanus Mts., 1 ♂; W. Turkestan, Issyk Kul; W. Siberia, Altai; E. Turkestan, Ili, Kashgar; E. Siberia, Amurland, 1 ♀; ?S. Africa, 1 ♂ type *pulverosa* (almost certainly a European specimen). *Exp.* 26–36 millim.

Larva. Meyr. Brit. Lep p. 122; Barrett, Lep. Brit. v. p. 293, pl. 221. f. 4.

Fuscous, sometimes dorsally tinged with greenish; dorsal line indistinctly paler, dark-edged, sometimes interrupted; lateral line hardly paler, sometimes dark-edged; spiracular line pale, dark-edged above; head blackish or fuscous. Food-plants: Corn, Peas, &c., especially in ricks, forming a small chamber for habitation. 9–5.

3963. Athetis extima. (Plate CXXX. fig. 8.)

Caradrina extima, Wlk. xxxii. 687 (1865); Smith, Cat. Noct. N. Am. p. 196.
Caradrina civica, Grote, Papilio, iii. p. 74 (1883).

Head, thorax, and abdomen grey-white slightly irrorated with brown; palpi black, white at tips; antennæ blackish except at base; tarsi black, ringed with white. Fore wing grey-white

slightly irrorated with fuscous; subbasal line black with small spot at costa and ending at submedian fold; antemedial line black with small spot at costa, oblique, waved, angled inwards at vein 1; orbicular a small round blackish spot; reniform a blackish lunule with some white points on its edges; medial line blackish with small spot at costa, oblique to the reniform and incurved below the cell; postmedial line black with small spot at costa, bent outwards below costa, then dentate, incurved below vein 4, some whitish points beyond it on costa; subterminal line whitish defined on inner side by small dentate rufous marks, very slightly excurved below vein 7 and at middle; the terminal area suffused with fuscous; a terminal series of black points slightly defined by whitish on inner side. Hind wing white, the terminal area tinged with brown; a terminal series of small dark spots from apex to vein 2; the underside with the costal and terminal areas slightly irrorated with brown, a blackish discoidal spot, postmedial rather diffused line from costa to vein 5, and terminal series of small spots.

Hab. Canada, Manitoba, Aweme (*Criddle*), 2 ♂, Saskatchewan, Regina (*Willing*), 1 ♂, Alberta, Calgary (*Wolley-Dod, Baird*), 6 ♂, 1 ♀, Br. Columbia (*Miss Ricardo*), 1 ♀, Vancouver (*Hawkins, J. J. Walker*), 1 ♂, 1 ♀ type; U.S.A., Oregon, Dalles, 1 ♀, Colorado (*Cockerell*), 2 ♂, Denver (*Oslar*), 1 ♂, 1 ♀, Nevada, 1 ♂, California (*Walsingham*), 3 ♂. *Exp.* 32–38 millim.

Larva. Head small, shining blackish, slightly brown-mottled. Body robust, obscure brown-mottled, with a broad paler dorsal stripe. Cervical shield concolorous with body. Food-plants: Low herbs; lives concealed underground or under leaves.—H. G. D.

3969. Athetis grisea. (Plate CXXX. fig. 9.)

Caradrina grisea, Ev. Bull. Mosc. 1848, iii. p. 215, & 1855, iv. p. 324; Staud. Cat. Lep. pal. p. 197.

Caradrina cinerascens, Tengstr. Not. Salls. Flor. & Faun. Fenn. vii. p. 309 (1870).

Head and thorax white tinged with red-brown and slightly irrorated with fuscous; palpi black, white at tips; antennæ fuscous except at base; tarsi fuscous ringed with white; abdomen white mixed with some brown. Fore wing grey slightly tinged with reddish brown and irrorated with fuscous, the terminal area suffused with fuscous; subbasal line represented by a black point on costa; antemedial line very indistinct, double, with black spot on the outer line at costa, oblique, minutely waved; orbicular a minute round whitish annulus; reniform defined by two white points on inner side and three on outer, some fuscous in lower part; traces of a medial line with small black spot at costa; postmedial line very indistinct, double, with small black spot at costa, bent outwards below costa, then minutely dentate, oblique below vein 4; subterminal line represented by a series of yellowish-white striæ defined on inner side by small rufous dentate marks, excurved below vein 7 and at middle; a terminal series of blackish

points; cilia with a fine pale line at base. Hind wing white, the apical area and termen to vein 2 tinged with brown; the underside with the costal area slightly irrorated with brown, an indistinct rather diffused postmedial line from costa to vein 6 and terminal series of points from apex to vein 2.

Hab. Scandinavia; Russia, Finland, 1 ♀, Urals, Sarepta (*Christoph*), 2 ♂, 2 ♀. *Exp.* 30–32 millim.

3970. Athetis hispanica.

Caradrina hispanica, Mab. Ann. Soc. Ent. Fr. 1906, p. 31, pl. 3. f. 1.

♀. Head, thorax, and abdomen pale grey slightly mixed with fuscous; palpi black, white at tips; antennæ black except at base; tarsi black ringed with white. Fore wing pale grey irrorated with black, the terminal area suffused with fuscous; subbasal line black, with small spot at costa and ending at submedian fold; antemedial line black with spot at costa, oblique, minutely dentate and angled inwards at vein 1; orbicular a small round fuscous spot; reniform a fuscous lunule; medial line fuscous with small black spot at costa, excurved at median nervure and angled outwards at vein 1; postmedial line black with small spot at costa, slightly bent outwards below costa, then dentate, incurved below vein 4; subterminal line grey defined by rufous on inner side, angled outwards at vein 7 and excurved at middle; a terminal series of small black lunules slightly defined by grey on inner side; a fine grey line at base of cilia. Hind wing white, the veins and terminal area to submedian fold suffused with brown; a discoidal point; cilia white with a brown line near base from apex to vein 2; the underside with the costal area irrorated with fuscous, a small discoidal spot, postmedial series of minute streaks on the veins, and terminal series of black points from apex to vein 2.

Hab. S. France, Hautes Alpes (*Hampson*), 2 ♀; Spain, La Granja, type † ♀ in Coll. Dumont. *Exp.* 32 millim.

3971. Athetis ingrata.

Caradrina ingrata, Staud. Iris, x. pp. 175, 286, pl. 4. f. 13 (1897); id. Cat. Lep. pal. p. 196.

Head and thorax white slightly mixed with brown; palpi black at sides, white in front and at tips; antennæ black except basal joint; tarsi black ringed with white; abdomen white slightly irrorated with brown. Fore wing grey-white irrorated with brown, the terminal area suffused with fuscous; subbasal line indistinct, double, with black point on outer line at costa, from costa to submedian fold; antemedial line indistinct, double, with black point on the outer line at costa, somewhat oblique and slightly angled outwards below costa and inwards on vein 1; orbicular a dark point; reniform a narrow brown lunule with some white scales on its edges; traces of a diffused dark medial line with black spot on

costa; postmedial line blackish with black spot at costa, slightly bent outwards below costa, then minutely dentate, slightly angled inwards at discal fold, incurved below vein 4 and angled outwards at vein 1, some pale points with slight dark streaks between them beyond it on costa; subterminal line formed of slight white marks defined by fuscous on inner side, minutely waved, angled outwards at vein 7 and excurved at middle; a terminal series of black points; cilia with fine white line at base. Hind wing white, the termen tinged with brown from apex to vein 2; the underside with the apical area slightly irrorated with brown.

Hab. Syria; Palestine, 1 ♂, 1 ♀. *Exp.* 22 millim.

3972. Athetis albina.

Caradrina cubicularis, Herr.-Schäff. Eur. Schmett., Noct. f. 425 (nec Schiff.).
Caradrina albina, Ev. Bull. Mosc. 1848, iii. p. 215, & 1855, iv. p. 325; Staud. Cat. Lep. pal. p. 196.
Charadrina congesta, Led. Verh. zool.-bot. Ges. Wien. 1853, p. 372, pl. 5. f. 2.

Head and thorax ochreous white; palpi blackish, white at tips; antennæ tinged with fuscous except at base; tarsi tinged with fuscous and ringed with white; abdomen white slightly tinged with ochreous. Fore wing pale ochreous, the terminal area tinged with fuscous: subbasal line represented by a fuscous point on costa, the antemedial line by a small black spot on costa and fuscous points in submedian fold and on inner margin; orbicular absent; reniform faintly tinged with fuscous, with two white points on inner side and three on outer; a medial fuscous point on costa; postmedial line indistinct, with small black point at costa, bent outwards below costa, slightly incurved at discal fold, incurved below vein 4; subterminal line whitish slightly defined by rufous on inner side and slightly excurved below vein 7 and at middle; a terminal series of slight fuscous points. Hing wing pure white.

Ab. 1. *congesta*. Fore wing greyer and irrorated with black.

Hab. Russia, Urals, Orenburg, 2 ♂, 2 ♀; S. Russia (*Grum-Grishmailo*), 1 ♀, Odessa, 2 ♂; Asia Minor, Pontus; Persia, Shahkuh (*Christoph*), 1 ♀; W. Turkestan, Ferghana, Saisan, Issyk Kul, Ala Tau; W. Siberia, Altai; Tibet, Kuku Nor. *Exp.* 32–34 millim.

Larva. Ochreous faintly mottled and striated with brown except on ventral surface; subdorsal line indistinct, pale; stigmata black; head brownish.

3973. Athetis terrea.

Noctua terrea, Frr. Neue Beitr. Schmett. iv. p. 26, pl. 303. ff. 3, 4 (1842); Herr.-Schäff. Eur. Schmett., Noct. ff. 90, 409; Staud. Cat. Lep. pal. p. 197.
Caradrina ustirena, Boisd. Gen. & Ind. Meth. p. 137 (1840); Dup. Lép. Fr., Suppl. iv. p. 221, pl. 69. f. 3.
Caradrina dubiosa, Staud. Cat. Lep. Eur. p. 111 (1871).

Head and thorax pale red-brown; palpi black, white at tips; antennæ blackish except at base; tarsi blackish ringed with white;

abdomen whitish suffused with red-brown. Fore wing pale reddish brown slightly irrorated with black, the terminal area suffused with fuscous; subbasal line represented by a black point on costa; antemedial line double, the inner line very indistinct, slightly angled outwards below costa and inwards on vein 1, with small black spot at costa; orbicular small, round, defined by blackish; reniform narrow, defined by blackish, with white point on inner side below, one on outer above and two below; an indistinct medial line oblique from costa to median nervure, then sinuous; postmedial line double, the outer line indistinct, with black spot at costa, bent outwards below costa, then dentate, incurved at discal fold and below vein 4; subterminal line indistinct, pale, defined on inner side by small dentate black marks between veins 7 and 3, very slightly excurved below costa and at middle; a terminal series of slight blackish striæ. Hind wing white, the termen suffused with fuscous from apex to vein 2, diffused inwards on the veins; the underside with the costal area irrorated with brown, a slight discoidal point.

Ab. 1. *dubiosa*. Fore wing with the dentate black subterminal marks obsolete.

Ab. 2. *ustirena*. Paler; fore wing more ochreous brown, the markings less developed.—S. France.

Ab. 3. Head, thorax, and fore wing grey without any brown or ochreous tinge.—Zermatt.

Hab. S. France, Zeller & Leech Colls.; Germany, Leech Coll.; Austria, Tirol; Hungary, Zeller, Frey & Leech Colls.; Switzerland, Zermatt; Dalmatia; S. Russia, Sarepta (*Christoph*); Asia Minor, Taurus; Persia; W. Turkestan, Ferghana, Issyk Kul; Mongolia, Urga; E. Siberia, Amurland. *Exp.* 34–38 millim.

Larva. Kirby, Butt. & Moths Eur. p. 173; Hffm. Raup. p. 109.

Pale grey mottled with brown; dorsal line and segmental rings whitish; stigmata black; head dark brown. Food-plants: *Taraxicum* and other low-growing herbs.

3974. Athetis fusicornis.

Caradrina fusicornis, Rmbr. Ann. Soc. Ent. Fr. 1832, p. 286, pl. 9. f. 5; Dup. Lép. Fr., Suppl. iii. pl. 29. f. 4; Staud. Cat. Lép. pal. p. 196.
Noctua kadenii, Frr. Neue Beitr. Schmett. ii. p 147, pl. 186 (1836); Fisch. von Rosl. Schmett. pl. 36. ff. 2 *a*, *b*; Dup. Lép. Fr., Suppl. iii. pl. 29. ff. 2, *a*, *b*; Herr.-Schäff. Eur. Schmett., Noct. f. 408; Hmpsn. Moths Ind. ii. p. 260; Staud. Cat. Lép. pal. p. 197.
Caradrina proxima, Rmbr. Faun. And. pl. 18. f. 7 (1839).
Caradrina variabilis, Bell. Ann. Soc. Ent. Fr. 1865, p. 104. pl. 2. f. 1.
Caradrina farinacea, Moore, P. Z. S. 1888, p. 411.

Head and thorax whitish tinged with pale reddish brown; palpi black, white at tips; antennæ blackish except at base; tarsi blackish, ringed with white; abdomen whitish tinged with ochreous brown. Fore wing whitish tinged with pale reddish brown and with slight dark irroration; subbasal line represented by a black point on costa and striga from cell; antemedial line very indistinct, oblique,

sinuous, with black spot at costa; orbicular a rufous point; reniform a rufous lunule defined by whitish points; faint traces of a sinuous medial line; postmedial line very indistinct, with series of black points on it and spot at costa, bent outwards below costa, then minutely dentate, incurved below vein 4; subterminal line represented by a series of slight whitish striæ defined on inner side by small rufous dentate marks at middle, slightly excurved below vein 7 and at middle and more or less angled inwards at discal fold; a terminal series of black striæ. Hind wing pure white with some blackish striæ on termen from below apex to vein 2; the underside with the costal area irrorated with brown, a slight discoidal lunule, postmedial series of points on the veins, and terminal series of black striæ.

Ab. 1. *proxima*. Paler; fore wing whitish grey.

Ab. 2. *variabilis*. Fore wing whitish grey slightly irrorated with pinkish or yellowish.—Corsica.

Ab. 3. *farinacea*. Fore wing with the centre of reniform fuscous with black points round it.

Hab. S. France, Frey Coll; Austria, Tirol; Hungary, Zeller, Frey & Leech Colls., Carniola; Spain; Corsica, type † ♀ in Coll. Mabille; Italy; Sicily, Zeller Coll; Dalmatia; Turkey, Leech Coll.; S. Russia; Asia Minor, Pontus, Taurus; Japan, Yokohama (*Manley*), 1 ♂, 1 ♀; Corea; Kashmir, Narkundah (*McArthur*), 2 ♀; Punjab, Kulu, Sultanpur (*G. Young*), 1 ♂, 1 ♀, Simla, 1 ♀ type *farinacea*, Dharmsála (*Hocking*), 3 ♂, 5 ♀, Umballa, 2 ♂. *Exp.* 32–36.

Larva. Kirby, Butt. & Moths Eur. p. 173; Hffm. Raup. p. 109, pl. 30. f. 1.

Grey-brown; dorsal line whitish; lateral lines dark; head and thoracic shield dark brown. Feeds on various low-growing plants. 3–4.

3975. **Athetis melanosticta**, n. sp. (Plate CXXX. fig. 10.)

Head and thorax ochreous white slightly irrorated with brown; palpi black, white at tips; antennæ fuscous except towards base; tibiæ and tarsi fuscous, the latter with slight pale rings; abdomen ochreous white, the anal tuft tinged with rufous, the ventral surface suffused with fuscous except at base. Fore wing pale ochreous thickly irrorated with fuscous, the terminal area suffused with fuscous from apex to vein 4; subbasal line absent; antemedial line represented by black points on the veins; orbicular a black point; reniform small, defined by black and whitish points; traces of a medial line, oblique and sinuous from costa to lower angle of cell; postmedial line indistinct, with black point at costa, bent outwards below costa, then oblique, dentate and produced to black points on the veins; subterminal line represented by small dentate black marks from costa to vein 4, somewhat angled outwards at vein 7; a terminal series of prominent black points. Hind wing pure white; the underside with the costal area tinged with ochreous and irrorated with brown.

Ab. 1. Fore wing much more thickly irrorated with fuscous, the markings obscured.

Hab. Br. E. Africa, Taveta (*Rogers*), 3 ♀, Athi-ya-Mawe (*Betton*), 1 ♂ type; Mashonaland (*Dobbie*), 1 ♂; Natal, Estcourt (*Hutchinson*), 1 ♀, Durban (*Leigh*), 1 ♂. *Exp.* 24–26 millim.

3976. **Athetis flavipuncta**, n. sp. (Plate CXXX. fig. 11.)

Head and thorax ochreous white; palpi with the 2nd joint black behind; antennæ black; tarsi fuscous ringed with white; abdomen white irrorated with brown. Fore wing ochreous white with slight dark irroration; subbasal line represented by slight black points on costa and median nervure with a black point beyond them in cell; antemedial line indistinct, blackish, curved, with black point at costa and angled inwards to black points on median nervure and vein 1; orbicular an indistinct small round brown spot; reniform indistinct, fuscous, constricted at middle, with orange spot on its outer edge with white point above it and two below it; postmedial line indistinct, blackish, interrupted, with black point at costa, bent outwards below costa, then dentate and produced to slight blackish points on the veins, incurved below vein 4; subterminal line yellowish defined on inner side by fuscous, slightly angled outwards at vein 7 and incurved at submedian fold; the terminal area tinged with fuscous; a terminal series of black striæ defined on inner side by slight yellowish marks; cilia fuscous mixed with grey and with slight grey line through them. Hind wing pure white, the apical area tinged with brown; a fine brown terminal line; cilia tinged with brown at apex; the underside with the costal area slightly tinged with yellow and irrorated with brown, a small discoidal spot and terminal series of black striæ.

Hab. Mashonaland, Salisbury (*Marshall, Dobbie*), 3 ♂, 2 ♀ type. *Exp.* 28–30 millim.

3977. **Athetis croceipuncta**, n. sp. (Plate CXXX. fig. 12.)

♂. Head and thorax reddish brown mixed with some grey; palpi black, the extremity of 2nd joint and the 3rd joint in front white; antennæ black; tarsi fuscous ringed with white; abdomen whitish suffused with brown. Fore wing greyish tinged with red-brown; subbasal line represented by black points on costa and below cell with a point beyond them in cell; antemedial line fine, blackish, with black point on costa, slightly angled outwards below costa and in submedian fold and inwards on median nervure and vein 1; orbicular a round brown spot, faintly defined by whitish; reniform defined by brown and with some white points round it and orange point on outer edge, somewhat constricted at middle; an indistinct oblique brown line from lower angle of cell to inner margin; postmedial line fine, blackish, with black point at costa, bent outwards below costa, then oblique, dentate and produced to

black points on the veins; subterminal line faintly defined by brown suffusion on inner side, angled outwards at vein 7 and excurved at middle; a terminal series of black striæ; cilia greyish fuscous. Hind wing white, the costal area tinged with brown; a fine brown terminal line; cilia brown towards apex; the underside with the costal area irrorated with fuscous brown.

Hab. Transvaal (*Cholmley*), 1 ♂; C. Colony, Transkei (*Miss F. Barrett*), 2 ♂ type. *Exp.* 24–30 millim.

3978. Athetis germaini.

Eryophila germainii, Dup. Ann. Soc. Ent. Fr. 1835, p. 194, pl. 4 *a*. f. 2; id. Lép. Fr., Suppl. iii. pl. 28. f. 5; Rmbr. Faun. And. pl. 18. f. 8; Frr. Neue Beitr. Schmett. pl. 467. f. 3; Herr.-Schäff. Eur. Schmett., Noct. f. 143; Staud. Cat. Lep. pal. p. 197.

Head and thorax whitish suffused with pale red-brown; palpi black, white at tips; antennæ blackish except at base; tarsi blackish ringed with white; abdomen white tinged with brown. Fore wing pale red-brown irrorated with fuscous, the terminal area suffused with fuscous; a slight subbasal line from costa to submedian fold with black point at costa; antemedial line very indistinct, oblique, sinuous, with small black spot at costa; orbicular represented by a few black scales; reniform a brown lunule with two white points on inner edge and three on outer and a small yellowish lunule at middle of outer side; faint traces of a curved medial line; postmedial line hardly traceable, double, with small black spot at costa, slightly bent outwards below costa and incurved below vein 4, some yellowish points beyond it on costa; subterminal line indistinct, pale, slightly defined by fuscous on inner side, somewhat angled outwards at vein 7 and excurved at middle; a terminal series of minute blackish points with whitish points on their inner side: a fine pale line at base of cilia. Hind wing white, the veins and marginal areas suffused with reddish brown; cilia white, brown at apex and with brown line near base from apex to vein 2; the underside with the costal area irrorated with brown, a discoidal point, postmedial series of points on the veins, and terminal series of points from apex to vein 2.

Hab. S. France, Zeller Coll; Spain, Catalonia; Sicily; Algeria. *Exp.* 30 millim.

3979. Athetis obtusa.

Caradrina obtusa, Hmpsn. Ill. Het. B. M. viii. p. 79, pl. 145. f. 6 (1891); id. Moths Ind. ii. p. 261.

Head and thorax whitish tinged with red-brown; palpi black, white in front and at tips; antennæ fuscous except at base; tarsi fuscous ringed with white; abdomen grey tinged with brown and irrorated with fuscous. Fore wing grey slightly tinged with red-brown and irrorated with fuscous; subbasal line blackish, curved, from costa to submedian fold; antemedial line blackish, curved, minutely dentate; orbicular a black point; reniform indistinct,

fuscous brown, constricted at middle where there is a slight yellowish point on its outer edge with traces of white points above and below it; traces of a sinuous brown medial line; postmedial line black, oblique from costa to vein 7, then dentate, slightly incurved at submedian fold; subterminal line defined by fuscous suffusion on inner side, slightly angled outwards at veins 7, 6, excurved and waved at middle; a terminal series of black striæ; cilia with a yellowish line at base. Hind wing white, the costal area tinged with brown; the underside with the costal area irrorated with brown, a discoidal point and postmedial and terminal series of points from costa to vein 2.

Hab. Hong Kong (*J. J. Walker*), 1 ♀; Madras, Nilgiris (*Hampson*), 4 ♀ type; Borneo, Kuching (*Shelford*), 1 ♀, Mt. Marapok, 1 ♂; Queensland, Townsville (*Dodd*), 1 ♀, Mackay, 1 ♀, Brisbane (*Turner*), 1 ♂, 1 ♀. *Exp.* 34–36 millim.

3980. Athetis ignava. (Plate CXXX. fig. 13.)

Caradrina ignava, Guen. Noct. i. p. 247 (1852).
Caradrina pervicax, Wllgrn. Öfv. Vet.-Akad. Förh. 1875. i. p. 107.
Caradrina partita, Hmpsn. Nat. Hist. Sokotra, p. 323, pl. 20. f. 24 (nec Wlk.).

Head and thorax pale grey tinged with reddish brown; palpi black, the 2nd joint white in front and at tips; antennæ with the basal half white, the terminal half fuscous; pectus and legs grey mixed with fuscous, the tarsi fuscous ringed with white; abdomen grey dorsally suffused with fuscous, ventrally irrorated with fuscous. Fore wing grey tinged with reddish brown and irrorated with fuscous; subbasal line slight, fuscous, curved, from costa to submedian fold; antemedial line indistinct, fuscous, oblique, sinuous; orbicular a small round black spot; reniform slightly defined by fuscous, with small yellow spot on its outer edge with one white point above it and two below it; an indistinct oblique sinuous medial line; postmedial line slight, blackish, oblique from costa to vein 7, incurved at discal fold, oblique from vein 4 to submedian fold and excurved above inner margin, a series of slight black points beyond it on the veins followed by a faint curved line; subterminal line indistinct, pale, slightly defined by brown on inner side, excurved below vein 7 and at middle; a terminal series of slight black points; cilia with a fine yellow line at base. Hind wing pure white; the underside with the costal area tinged with yellow and slightly irrorated with brown, postmedial black points on veins 8 to 6.

Hab. Sokotra, Adho Dimellus (*O.-Grant*), 2 ♀; Br. E. Africa, Athi-ya-Mawe (*Betton*), 1 ♀, Lagari (*Betton*), 2 ♀, Ndimu (*Betton*), 5 ♀, Nairowa (*Betton*), 3 ♀, Kikuya (*Crawshay*), 1 ♀; Gazaland, Chirinda Forest (*Marshall*), 1 ♂; Transvaal (*Cholmley*), 2 ♂, 1 ♀, Pretoria (*Janse*), 1 ♂, Piet Retief (*Crawshay*), 1 ♂, 1 ♀; Natal, Tugela R. (*Reynolds*), 1 ♀, Estcourt (*Hutchinson*), 2 ♂; Mauritius, Curepipe (*Tulloch*), 2 ♂. *Exp.* 30–32 millim. Type † in Mus. Paris.

3981. Athetis pigra. (Plate CXXX. fig. 14.)

Caradrina pigra, Guen. Noct. i. p. 248 (1852).
Caradrina partita, Wlk. x. 294 (1856).
Caradrina orbata, Möschl. Verh. zool.-bot. Ges. Wien, xxxiii. p. 203, pl. xvi. f. 7 (1883).

Head, thorax, and abdomen pale rufous mixed with greyish; palpi black, greyish at tips; antennæ fuscous except at base; pectus and legs fuscous brown, the tarsi with pale rings. Fore wing greyish suffused and irrorated with rufous; subbasal line slight, angled outwards below costa and ending at submedian fold; antemedial line indistinct, double, the lines widely separated, bent inwards to costa, then erect, sinuous; orbicular absent; reniform faint, brownish, with minute yellow lunule on outer edge with white point above it and three below it; an oblique sinuous brown medial line; postmedial line brown, excurved from costa to vein 3 and incurved in submedian interspace, with series of slight dark points beyond it on the veins followed by a faint curved line approximated to the indistinct brown subterminal line, which is slightly angled outwards at vein 7; a fine dark terminal line and yellow line at base of cilia. Hind wing white, the apex faintly tinged with brown; a fine brown terminal line; cilia brownish at apex; the underside with the costal area strongly irrorated with brown, a postmedial series of minute dark streaks on the veins from costa to vein 2 with dark line on costal area.

Hab. W. Africa, Congo (*Richardson*), 1 ♀ type *partita*; Br. E. Africa, Mombasa (*de la Garde*), 3 ♀; Transvaal, White R. (*Cooke*), 1 ♀; Natal (*Gooch*), 1 ♂, 1 ♀; C. Colony, Caffraria; Réunion; Mauritius, Curepipe (*Tulloch*), 2 ♂. *Exp.* 30–32 millim.

3982. Athetis sincera. (Plate CXXX. fig. 15.)

Spælotis sincera, Swinh. P. Z. S. 1889, p. 411; Hmpsn. Moths Ind. ii. p. 261.

Head, thorax, and abdomen ochreous; palpi black at sides except at tips; antennæ blackish except at base; tarsi tinged with fuscous and with slight pale rings. Fore wing ochreous tinged with fuscous and irrorated with whitish; subbasal line represented by slight dark points below costa and cell; antemedial line indistinct, waved; orbicular a dark point; reniform indistinct, fuscous surrounded by some white points, narrow above and constricted at middle; medial shade indistinct, waved; postmedial line indistinct, minutely dentate, excurved from costa to vein 4, then incurved; subterminal line indistinct, pale, slightly defined by fuscous on inner side, angled outwards at vein 7 and excurved at middle; a terminal series of slight dark points. Hind wing white slightly tinged with ochreous; the underside with the costal area slightly irrorated with brown.

Hab. Punjab, Kulu, Sultanpur (*G. Young*), 5 ♂, 2 ♀, Simla (*Swinhoe*), 1 ♀ type. *Exp.* 30–34 millim.

3983. Athetis placida.

Radinacra placida, Moore, Lep. Ceyl. iii. p. 30, pl. 147. f. 4 (1884); Hmpsn. Moths Ind. ii. p. 261.

Head, thorax, and abdomen pale rufous mixed with greyish; palpi black, white at tips; antennæ black; tarsi black ringed with white. Fore wing greyish suffused with rufous and with slight dark irroration; subbasal line slight, dark, curved, from costa to submedian fold; antemedial line very indistinct, oblique, sinuous; orbicular a black point; reniform indistinct, diffused, blackish, constricted at middle, with an ochreous point on its outer edge and slight whitish points round it; traces of a dark medial line, oblique from costa to reniform and sinuous below the cell; postmedial line slight, blackish, bent outwards below costa, then minutely dentate, incurved below vein 4; subterminal line defined by blackish suffusion on inner side, minutely dentate, excurved below vein 7 and at middle; a terminal series of black striæ. Hind wing white, the apex slightly tinged with brown; the underside with the costal area tinged with ochreous, a dark discoidal point and postmedial points on the veins from costa to vein 4.

Hab. Ceylon, 3 ♂, 1 ♀ type. *Exp.* 26–30 millim.

3984. Athetis cognata. (Plate CXXX. fig. 16.)

Graphiphora cognata, Moore, Lep. Atk. p. 119 (1882); Hmpsn. Moths Ind. ii. p. 259.

Head and thorax grey mixed with pale brown; palpi black at sides, whitish in front and at tips; tarsi fuscous ringed with white; abdomen grey suffused with brown. Fore wing grey tinged with ochreous and irrorated with brown, the terminal area suffused with fuscous; subbasal line black, curved, from costa to submedian fold; antemedial line black, excurved below costa and slightly incurved below submedian fold; orbicular a black point; reniform a minute yellow spot with white point above it; medial line fuscous, oblique from costa to lower angle of cell, then incurved; postmedial line black, oblique from costa to vein 7, then produced to slight streaks on the veins, incurved below vein 4 and bent outwards above inner margin, traces of a curved line beyond it and some pale points on costa; subterminal line defined by fuscous suffusion on inner side, excurved below vein 7 and at middle; a slight black terminal line and slight pale lines at base and middle of cilia. Hind wing white, the veins, costal area, and termen tinged with brown; a fine brown terminal line; cilia white with a brown line through them; the underside with the costal area irrorated with brown, a slight discoidal spot and postmedial series of points on the veins from costa to vein 3.

Hab. Punjab, Jubbulpore, 1 ♀; Sikhim (*Atkinson*, *Dudgeon*), 1 ♂, 1 ♀ type; Bombay (*Swinhoe*), 5 ♀; Madras, Bellary, Ramandrug (*Campbell*), 1 ♂, Nilgiris (*Hampson*), 1 ♂. *Exp.* 22 millim.

3985. **Athetis singula.** (Plate CXXX. fig. 17.)

Caradrina singula, Möschl. Verh. zool.-bot. Ges. Wien, xxxiii. p. 292, pl. xvi. f. 6 (1883).

Head and thorax rufous; palpi black, whitish at tips; antennæ black except basal joint; pectus and legs ochreous mixed with fuscous, the tarsi black ringed with white; abdomen pale rufous tinged with fuscous. Fore wing yellowish suffused with rufous; subbasal line black, excurved below costa and ending at submedian fold; antemedial line black with small spot at costa, slightly angled outwards below costa, excurved below cell and above inner margin and angled inwards on vein 1; orbicular an indistinct round fuscous spot; reniform fuscous with small ochreous white lunule on its outer edge, usually with points above and below it; medial line diffused, fuscous, oblique from costa to lower angle of cell, then incurved; postmedial line black with small spot at costa, bent outwards below costa, then minutely dentate and produced to slight streaks on the veins, excurved to vein 4, then incurved; subterminal line defined by fuscous suffusion on inner side, angled outwards at vein 7 and excurved at middle; a terminal series of black points with white points on their inner side; cilia greyish fuscous with fine pale lines at base and middle. Hind wing white, the costal area and termen to vein 2 tinged with ochreous-brown, a fine brown terminal line; cilia brownish at apex; the underside with the costal area irrorated with brown, a blackish discoidal spot, slight postmedial line on costal area, and black terminal line.

Hab. Mashonaland, Salisbury (*Marshall, Dobbie*), 1 ♂, 3 ♀: Bechuanaland, N'Gami (*Lugard*), 1 ♂; Natal, Maritzburg (*Burnup*), 1 ♂, 1 ♀, Duff Road, 1 ♂; C. Colony, Caffraria. *Exp.* 28–30 millim.

3986. **Athetis heliastis**, n. sp. (Plate CXXX. fig. 18.)

♂. Head whitish; palpi black, white at tips and with black point on 3rd joint; frons with lateral black spots; antennæ blackish; thorax black-brown with a slight greyish tinge; pectus and legs grey mixed with black, the tarsi black ringed with white; abdomen fuscous mixed with grey. Fore wing black-brown irrorated with grey; subbasal line black slightly defined by ochreous on outer side, from costa to submedian fold, a white point beyond it in cell: antemedial line black with ochreous point on costa, oblique, waved; orbicular with ochreous points on inner and outer edges; reniform a small round orange spot with ochreous point on inner side above, white point on outer, and three white points below all defined by black; a faint dark line from lower angle of cell to inner margin; postmedial line indistinct, blackish slightly defined by grey on outer side, bent outwards below costa, then with black points beyond it on the veins, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line represented by a series of faint pale points, excurved below vein 7 and at middle;

a terminal series of black points with white points on their inner side; cilia fuscous black. Hind wing white, the apical area and termen tinged with fuscous; a black terminal line; cilia white with fuscous line through them from apex to vein 2; the underside white, the costal area irrorated with black, the apex tinged with brown, a black discoidal spot, and sinuous postmedial line from costa to vein 3.

Hab. Transvaal, White R. (*Cooke*), 1 ♂ type. *Exp.* 30 millim.

3987. Athetis anomœosis, n. sp. (Plate CXXX. fig. 19.)

♀. Head and thorax reddish brown tinged with grey; palpi black, white at tips; lower part of frons whitish; antennæ black; pectus and legs whitish mixed with brown, the tarsi fuscous ringed with white; abdomen reddish brown, the ventral surface white irrorated with brown. Fore wing reddish brown suffused with fuscous and irrorated with grey; subbasal line black, excurved below costa and ending at submedian fold; antemedial line indistinct, blackish, oblique, waved, with small black spot at costa; orbicular a faint dark mark; reniform a minute whitish lunule with white points above and below it; traces of a slight dark medial line; postmedial line indistinct, slight, faintly defined by grey on outer side, with small black spot at costa, bent outwards below costa, then minutely waved, incurved below vein 4, some pale points with slight blackish streaks between them beyond it on costa; subterminal line very indistinct, pale, faintly defined by brown suffusion on inner side, excurved below vein 7 and at middle; a fine dark terminal line and pale line at base of cilia. Hind wing pure white; a fine brown terminal line from apex to vein 2; cilia yellowish with brown tips from apex to vein 2; the underside with the costal area irrorated with dark brown, a dark discoidal spot, diffused postmedial line from costa to vein 6, and terminal series of minute lunules.

Hab. Br. E. Africa, Gwelil (*Betton*), 2 ♀ type. *Exp.* 28 millim.

3988. Athetis albirena.

Curadrina albirena, Hmpsn. Ann. S. Afr. Mus. ii. p. 302 (1902).

♂. Head white mixed with some fuscous; palpi blackish, white at tips; thorax fuscous mixed with some white: pectus and legs whitish, the tibiæ banded with fuscous, the tarsi fuscous ringed with white; abdomen grey irrorated with brown, the anal tuft tinged with rufous. Fore wing fuscous mixed with white; antemedial line whitish, ill-defined and diffused, slightly waved, erect; orbicular absent; reniform white defined by black and tinged with yellow at middle; postmedial line hardly traceable, defined by a few white scales and with white spot at costa, bent outwards below costa, then

minutely waved, incurved below vein 4, a white point beyond it on costa; subterminal line represented by slight white points and small white spots on costa just before apex and above tornus. Hind wing white irrorated with brown especially on terminal area; a slight discoidal spot; cilia white with a slight brown line near base; the underside with the costal and terminal areas irrorated with brown, a small discoidal spot and indistinct curved postmedial line.

Hab. Bechuanaland, N'Gami (*Lugard*), 1 ♂ type. *Exp.* 20 millim.

3989. **Athetis leuconephra**, n. sp. (Plate CXXX. fig. 21.)

♂. Head and tegulæ white tinged with rufous; palpi black at base; antennæ black ringed with white; thorax dark brown with some white scales, the metathorax blue-black; pectus and legs ochreous white, the tibiæ banded with black, the tarsi black ringed with white; abdomen brown mixed with ochreous, the ventral surface ochreous white irrorated with brown. Fore wing greyish fuscous irrorated with white and with some ochreous below costa and in submedian fold to postmedial line; subbasal line black defined by white on outer side, minutely waved, from costa to submedian fold; antemedial line black slightly defined by white on inner side on costal half, angled outwards below costa, then oblique, sinuous; orbicular a small round black spot with white annulus, a black patch beyond it before the reniform, which is pure white slightly defined by black and with slight black lunule in centre; a diffused oblique sinuous dark line from lower angle of cell to inner margin; postmedial line black defined by ochreous on outer side, strongly bent outwards below costa, then minutely waved, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line formed of white scales with minute black streaks before it from below costa to vein 3, angled outwards at vein 7, excurved at middle and angled inwards at discal and submedian folds; a terminal series of black striæ. Hind wing ochreous suffused with brown; cilia ochreous white, brown at apex; the underside white slightly irrorated with brown, the costal area tinged with ochreous, a dark discoidal point, curved postmedial line, and terminal series of dark striæ.

Hab. Mashonaland, Salisbury (*Marshall*), 1 ♂ type. *Exp.* 26 millim.

3990. **Athetis bicornis.**

Orthosia bicornis, Hmpsn. Ill. Het. B. M. viii. p. 77, pl. 145. f. 18 (1891); id. Moths Ind. ii. p. 262.

Head, thorax, and abdomen whitish mixed with brown; palpi black at sides except at tips; tarsi fuscous ringed with white. Fore wing grey suffused with brown and irrorated with fuscous, the

terminal area rather browner; subbasal line black, from costa to submedian fold; antemedial line indistinct, blackish, oblique from costa to median nervure, then slightly sinuous; orbicular represented by an oblique black bar on inner side touching the antemedial line, with two points beyond it; reniform a black lunule slightly defined by whitish and with two black points on its inner side; a faint dark medial line oblique from costa to reniform, then erect; postmedial line very indistinct, with small black spot at costa and slightly defined by grey on outer side, bent outwards below costa, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line prominent, whitish, excurved at vein 7 and slightly incurved below vein 3; a terminal series of minute black points; cilia with white line at base. Hind wing white, the veins and marginal areas tinged with brown, a slight discoidal point; cilia white with a slight brown line through them; the underside with the costal and terminal area to vein 2 irrorated with brown, a black discoidal point, postmedial series of points on the veins, and terminal series of points from apex to vein 2.

Hab. Madras, Gooty (*Campbell*), 1 ♂, Nilgiris (*Hampson*), 1 ♂, 2 ♀ type. *Exp.* 30 millim.

3991. Athetis meralis. (Plate CXXX. fig. 22.)

Caradrina meralis, Morr. Can. Ent. vii. p. 215 (1875); Smith, Cat. Noct. N. Am. p. 195.
Caradrina bilunata, Grote, Can. Ent. ix. p. 199 (1877).

♀. Head and thorax pale brown tinged with rufous and mixed with whitish; palpi black at sides, the tips whitish; tarsi blackish ringed with whitish; abdomen pale reddish brown. Fore wing grey tinged with rufous and thickly irrorated with black; subbasal line black defined by greyish on outer side, from costa to submedian fold; antemedial line indistinctly double filled in with grey, oblique, minutely and irregularly sinuous; orbicular absent; reniform a small black lunule; postmedial line indistinctly double filled in with grey, bent outwards below costa, then minutely waved, oblique below vein 4; traces of a minutely waved subterminal line; a terminal series of black striæ. Hind wing white, the veins and marginal areas slightly irrorated with brown; the underside with the costal area irrorated with brown, a slight discoidal lunule and traces of postmedial line from costa to vein 4.

Hab. Canada, Br. Columbia, Kaslo (*Cockle*), 1 ♀; U.S.A., N. & E. States, Maine, Massachusetts, Magnolia (*Thaxter*), 2 ♀ type *bilunata*, New Mexico. *Exp.* 34 millim.

3992. Athetis melanopis, n. sp. (Plate CXXX. fig. 23.)

♂. Head and thorax fuscous brown mixed with some grey; pectus and legs paler; abdomen grey irrorated with brown. Fore

wing greyish thickly suffused and irrorated with fuscous brown; subbasal line blackish, waved, from costa to submedian fold; antemedial line indistinct, dark, oblique from costa to median nervure, then slightly incurved; orbicular a somewhat oblique black spot touching the antemedial line; reniform rather oblique elliptical with small black spot on upper edge and two at lower extremity; a rather diffused dark line from lower angle of cell to inner margin; postmedial line indistinct, dark, defined by whitish on outer side, excurved from costa to vein 4, then oblique; a faint pale curved subterminal line defined by some black scales on inner side; a terminal series of slight black points; a fine white line at base of cilia. Hind wing white; the underside with the costal area slightly irrorated with brown, a black discoidal point.

Hab. Mashonaland, Salisbury (*Marshall*), 1 ♂ type. *Exp.* 30 millim.

3993. Athetis glauca. (Plate CXXX. fig. 24.)

Caradrina glauca, Hmpsn. Ann. S. Afr. Mus. ii. p. 304 (1902).

Head and thorax brown mixed with grey; palpi black, white at tips; tarsi brown ringed with white; abdomen grey suffused with brown. Fore wing grey-brown slightly irrorated with white and with faint ochreous streaks in discal and submedian folds; subbasal line blackish, waved, from costa to submedian fold; antemedial line blackish, oblique, sinuous, angled outwards in submedian fold and inwards on vein 1; orbicular a small round blackish spot; reniform small, defined by blackish and rather constricted at middle; postmedial line black, bent outwards below costa, then dentate and produced to white points on the veins, excurved to vein 4, then incurved; subterminal line faint, whitish, slightly defined on inner side by fuscous suffusion, excurved below vein 7 and at middle; a terminal series of black striæ. Hind wing pure white, the costal area and veins of terminal area tinged with brown, a fine brown terminal line; the underside with the costal area suffused with brown and irrorated with white, traces of a punctiform postmedial line from costa to vein 3.

Ab. 1. Fore wing with the orbicular elongate.

Hab. Br. E. Africa, Machakos (*Crawshay*), 5 ♂, Kikuyu (*Crawshay*), 1 ♀, Eb Urru (*Betton*), 1 ♀; Transvaal (*Pead*), 1 ♂, Piet Retief (*Crawshay*), 2 ♂, Johannesburg (*Cooke*), 1 ♀; Natal, Estcourt (*Hutchinson*), 1 ♂, 1 ♀ type. *Exp.* 24–32 millim.

3994. Athetis melanephra, n. sp. (Plate CXXX. fig. 25.)

Head and thorax fuscous mixed with grey-white; palpi with the third joint whitish; antennæ whitish; tegulæ tipped with white;

tarsi fuscous ringed with white; abdomen white tinged with brown. Fore wing whitish suffused with brown and irrorated with fuscous, the veins with slight dark streaks; subbasal line double filled in with whitish, waved, from costa to submedian fold in which there is a slight blackish streak beyond it; antemedial line black defined by white on inner side, angled outwards below costa, then oblique, sinuous; orbicular a rather elongate black spot; reniform a black lunule; postmedial line black defined by white on outer side and with small black spot at costa, bent outwards below costa, then dentate, incurved below vein 4, a fuscous patch beyond it on costal area with white points on costa; subterminal line indistinct, whitish, defined on inner side by fuscous suffusion, slightly angled outwards at vein 7 and angled inwards at submedian fold where there is a diffused blackish mark before it; a terminal series of black striæ. Hind wing pure white, the apex slightly tinged with fuscous; the underside with the costal area suffused and irrorated with fuscous, a slight discoidal spot and fine brown terminal line.

Hab. Bechuanaland, N'Gami (*Lugard*), 1 ♀; Transvaal, Modderfontein (*Cruger*), 1 ♀; Natal, Mooi R., 1 ♀; Basutoland, Maseru (*Crawshay*), 1 ♂, 1 ♀ type, Masite (*Crawshay*), 1 ♂. *Exp.* 28 millim.

3995. Athetis atrirena. (Plate CXXX. fig. 26.)

Caradrina atrirena, Hmpsn., Ann. S. Afr. Mus. ii. p. 304 (1902).

Head and thorax pale rufous; palpi black, whitish at tips; fore tibiæ blackish, the tarsi black with pale rings; abdomen whitish tinged with red-brown. Fore wing pale rufous irrorated with fuscous; subbasal line black expanding into a spot at costa, waved, from costa to submedian fold; antemedial line black with small spot at costa, angled inwards below costa, then oblique, waved; orbicular absent; reniform a narrow black lunule; a diffused fuscous medial line, oblique from costa to reniform and slightly incurved from lower angle of cell to inner margin; postmedial line black with small spot at costa, oblique from costa to vein 7, then minutely dentate, somewhat incurved at discal fold, incurved below vein 4, some slight pale points beyond it on costa; subterminal line defined by fuscous suffusion on inner side, oblique towards costa, excurved below vein 7, excurved and minutely waved at middle; a terminal series of minute black lunules. Hind wing pale reddish brown; cilia yellowish at base, with diffused brown line at middle and whitish tips; the underside whitish tinged with ochreous and slightly irrorated with brown, a blackish discoidal lunule and indistinct curved postmedial line.

Hab. Cape Colony, Worcester Distr., Matjesfontein, 1 ♂ type, Deelfontein (*Sloggett*), 1 ♀. *Exp.* 32 millim.

3996. Athetis absorbens. (Plate CXXX. fig. 27.)

Graphiphora absorbens, Wlk. x. 403 (1856).

Head, thorax, and abdomen pale rufous mixed with whitish; palpi tinged with fuscous. Fore wing pale rufous; traces of a subbasal dark striga from costa; an oblique sinuous antemedial line angled inwards on vein 1; orbicular and reniform fuscous brown, undefined, the former round, the latter elliptical; traces of a dark medial line oblique from costa to reniform and sinuous from cell to inner margin; postmedial line indistinct, dark, oblique from costa to vein 6, then dentate and produced to points on the veins, excurved to vein 4, then incurved; subterminal line slightly defined by fuscous on inner side, angled outwards at vein 7 and excurved at middle; a terminal series of dark striæ; cilia fuscous at tips. Hind wing whitish suffused and irrorated with reddish brown, the underside with dark discoidal spot and diffused curved postmedial line.

Ab. 1. Fore wing with the postmedial area suffused with fuscous.—Kokstad.

Hab. Cape Colony (*Sir A. Smith*), 1 ♂, 2 ♀ type, Kokstad (*Mrs. Pringle*), 1 ♂. *Exp.* 32–38 millim.

3997. Athetis pallicornis.

Caradrina pallicornis, Feld. Reis. Nov. pl. 109. f. 20 (1874).

Head and thorax brown mixed with grey-white; palpi and front of pectus fuscous brown; fore tibiæ banded with fuscous, the tarsi fuscous ringed with white; abdomen grey suffused with brown. Fore wing grey-brown; subbasal line slight, blackish, curved, a black point beyond it in cell; antemedial line blackish, angled outwards below costa and excurved in submedian interspace; orbicular a minute dark point; reniform a diffused round black spot; medial line blackish, sinuous, oblique from costa to reniform; postmedial line blackish, oblique from costa to vein 6, then dentate and produced to black points on the veins, excurved to vein 4, then oblique, subterminal line faintly defined by fuscous on inner side and with fuscous mark before it below vein 7, excurved below vein 7 and at middle; a terminal series of minute dark lunules. Hind wing grey suffused with fuscous brown, an indistinct discoidal spot and curved postmedial line; the underside somewhat paler with blackish discoidal lunule, diffused curved postmedial line, and terminal series of minute blackish lunules.

Hab. Basutoland, Maseru (*Crawshay*), 1 ♀; C. Colony, Transkei (*Miss F. Barrett*), 1 ♂, 1 ♀, Knysna (*Trimen*), type †♂ in Coll. Rothschild. *Exp.* 32–36 millim.

3998. Athetis pertinax.

Caradrina pertinax, Staud. Hor. Soc. Ent. Ross. xiv. p. 387 (1878); id. Cat. Lep. pal. p. 195.
Caradrina vicina, Rom. Mém. ii. p. 55, pl. 3. f. 3 (1885), nec Staud.
Caradrina melanura, Alph. Rom. Mém. ix. p. 34 (1897).
Caradrina expansa, Alph. Rom. Mém. ix. p. 34 (1897).
Caradrina morosa, Alph. Rom. Mém. ix. p. 34 (1897), nec Led.
Agrotis inumbrata, Staud, Iris, xii. p. 363 (1899).

Head and thorax white slightly tinged with ochreous brown; palpi black, white in front and at tips; tarsi black ringed with white; abdomen white. Fore wing ochreous white slightly irrorated with brown, the terminal area suffused with pale brown; subbasal line represented by a small black spot on costa; antemedial line indistinct, double, with black spot on the outer line at costa, oblique, waved; orbicular a brown point; reniform a brown lunule with greyish centre; a slight medial dark shade with black spot at costa, oblique from costa to reniform; postmedial line indistinct, double, with black spot on inner line at costa, minutely waved, excurved from costa to vein 4, then incurved, some ochreous points beyond it on costa; subterminal line ochreous, minutely waved, angled outwards at vein 7, excurved at middle and angled inwards at discal and submedian folds; a terminal series of minute black lunules; cilia white, the bases yellowish followed by a slight brown line. Hind wing pure white, the termen slightly tinged with brown from apex to vein 2; the underside with slight brown patch at apex.

Ab. 1. *inumbrata*. Fore wing more ochreous, the terminal area broadly suffused with fuscous; hind wing with the terminal area suffused with fuscous.—Taurus.

Ab. 2. *melanura*. Fore wing whitish, the terminal area broadly black.—Armenia.

Ab. 3. *expansa*. Fore wing with the markings more distinct, the underside almost without dark suffusion on terminal area.—W. and E. Turkestan.

Hab. Armenia, 1 ♂; Asia Minor, Pontus, 2 ♀, Taurus, Zeitun; Syria, 1 ♀; W. Turkestan, Ferghana, Issyk Kul; E. Turkestan, Thian-Shan Mts. *Exp.* 30 millim,

3999. Athetis vicina. (Plate CXXX. fig. 28.)

Caradrina vicina, Staud. Berl. ent. Zeit. 1870, p. 118; id. Cat. Lep. pal. p. 196.
Caradrina belucha. Swinh. Trans. Ent. Soc. 1885, p. 348. pl. 9. f. 2; Hmpsn. Moths Ind. ii. p. 261.
Caradrina syriaca, Staud. Iris, iv. p. 294 (1892).
Caradrina fergana, Staud. Iris, iv. p. 294 (1892).

♂. Head and thorax ochreous white slightly irrorated with red-brown; palpi with black-brown patch at side of 2nd joint; tarsi blackish ringed with white; abdomen white. Fore wing yellowish white slightly irrorated with brown, the terminal area suffused with

fuscous brown; subbasal line represented by black striæ from costa and median nervure; antemedial line blackish with black spot on costa, oblique, interrupted; orbicular a small round brown spot; reniform a small lunule defined by blackish; medial line with black spot at costa, oblique to reniform, slightly sinuous from cell to inner margin; postmedial line much interrupted with small black spots at costa, submedian fold and inner margin, strongly bent outwards below costa, slightly incurved at discal fold, incurved below vein 4, some yellow points beyond it on costa; traces of a pale subterminal line, excurved below vein 7 and at middle; a terminal series of small black lunules; cilia brownish with a fine pale line at base. Hind wing white, the veins of terminal area and termen slightly tinged with brown from apex to vein 2; a fine brown terminal line from apex to submedian fold; cilia tinged with brown at apex; the underside with small apical brownish patch and terminal series of small blackish lunules from apex to vein 2.

♀. Fore wing with the terminal area hardly suffused with fuscous except before subterminal line.

Ab. 1. *fergana*. Fore wing more distinctly marked but without the dark suffusion on terminal area.—Armenia, W. Turkestan.

Ab. 2. *syriaca*. Darker, the hind wing wholly tinged with fuscous.—Asia Minor, Syria.

Hab. Spain, Murcia; S. Russia, Sarepta, 1 ♂, 3 ♀, Zeller and Frey Colls.; Armenia; Asia Minor, Pontus, Taurus; Syria; Persia; W. Turkestan, Turcomania, Ferghana, Issyk Kul; E. Turkestan, Ili; Beluchistan, Quetta (*Swinhoe*), 1 ♀ type *belucha*. *Exp.* ♂ 30, ♀ 32 millim.

4000. **Athetis flavitincta**, n. sp. (Plate CXXX. fig. 29.)

Head and thorax whitish mixed with brownish ochreous; palpi blackish at sides; tarsi blackish ringed with white; abdomen pale red-brown. Fore wing whitish tinged with reddish ochreous and irrorated with brown, the terminal area suffused with pale fuscous; subbasal line represented by a black point on costa; antemedial line indistinct, double, with black point on the outer line at costa, then oblique and slightly waved; orbicular absent; reniform narrow, faintly defined by fuscous; a diffused curved waved medial shade; postmedial line indistinct, double, with black point on the inner line at costa, slightly bent outwards below costa, then minutely dentate, oblique below vein 4, some pale points beyond it on costa; subterminal line indistinct, pale, minutely waved; cilia greyish ochreous mixed with brown and with fine ochreous line at base. Hind wing white tinged with brown, the veins and termen brown; cilia white with a brown line through them from apex to vein 2; the underside white, the costal area irrorated with brown, the termen suffused with brown from apex to vein 2.

Hab. Punjab, Kulu, Sultanpur (*G. Young*), 2 ♂, 2 ♀ type. *Exp.* 32 millim.

4001. Athetis stygia, n. sp (Plate CXXX. fig. 30.)

Head, thorax, and abdomen brown mixed with grey; palpi blackish, whitish at tips; tarsi fuscous ringed with whitish. Fore wing grey tinged with brown and thickly irrorated with dark brown; subbasal line brown, curved, from costa to submedian fold; antemedial line brown, angled outwards below costa, then obliquely excurved; orbicular a small round brown spot with faint pale annulus; reniform elongate elliptical, brown with faint pale annulus; a rather diffused dark medial line, oblique from costa to median nervure, then inwardly oblique; postmedial line indistinct, dark, bent outwards below costa, then dentate and produced to dark points on the veins, incurved below vein 4, some pale points beyond it on costa; subterminal line whitish defined on inner side by red-brown, oblique, almost straight; a terminal series of slight black points. Hind wing grey suffused with brown; a terminal series of slight dark striæ; cilia with a fine whitish line at base; the underside whitish thickly irrorated with brown, a black discoidal lunule and rather diffused curved postmedial line.

Hab. Punjab, Kulu, Sultanpur (*G. Young*), 3 ♂, Simla (*Swinhoe, Harfcrd, Nurse*), 3 ♂, 1 ♀ type, Dharmsála (*Hocking*), 2 ♂, 2 ♀, Kala Pani (*Yerbury*), 4 ♂. *Exp.* 26–36 millim.

4002. Athetis paupera.

Caradrina paupera, Christ. Rom. Mém. ii. p. 56, pl. 3. f. 4 (1885); Staud. Cat. Lep. pal. p. 204.

Head and thorax grey-white mixed with brown; tarsi slightly ringed with white; abdomen grey-white suffused with brown except at base. Fore wing glossy grey-white tinged and irrorated with brown, the terminal area slightly darker; traces of a subbasal line from costa to submedian fold with dark point at costa; antemedial line very indistinct, oblique, waved; orbicular and reniform indistinct, fuscous, undefined, the former round, the latter elliptical; postmedial line indistinct, dark, with dark point at costa, bent outwards below costa, then sinuous, incurved below vein 4, some whitish points beyond it on costa; subterminal line defined by slight dark suffusion on inner side, excurved below vein 7 and at middle; a terminal series of dark points. Hind wing whitish suffused with brown, the cilia whitish; the underside whitish, the costal and terminal areas slightly tinged with brown, a faint dark discoidal lunule and indistinct sinuous postmedial line.

Hab. Armenia; W. Turkestan, Turcomania, 1 ♂, Ferghana; E. Turkestan, Ili. *Exp.* 32 millim.

4003. Athetis morpheus.

Phalæna morpheus, Hüfn. Berl. Mag. iii. p. 302 (1767); Steph. Ill. Brit. Ent., Haust. ii. p. 157; Staud. Cat. Lep. pal. p. 197.

Noctua pulla, Beckw. Trans. Linn. Soc. 1, 2, p. 5, pl. 1. ff. 7, 9 (1794).

Noctua sepii, Hübn. Eur. Schmett., Noct. f. 161 (1802); Sepp, Ins. iv. p. 117, pl. 34; Dup. Lép. Fr. vi. p. 52, pl. 75. f. 5; Steph. Ill. Brit. Ent., Haust. ii. p. 158.

Head and thorax dark brown mixed with greyish ; palpi blackish, greyish at tips; antennæ ringed with whitish at base; abdomen ochreous suffused with brown, whitish at base. Fore wing greyish ochreous thickly suffused and irrorated with dark brown, the postmedial area rather darker ; subbasal line represented by a slight dark striga from costa ; antemedial line indistinct, double, oblique, waved, with small black spot on the outer line at costa ; orbicular and reniform indistinct, brown, the former irregular, the latter constricted at middle and with slight yellowish mark on its outer edge at middle ; an indistinct diffused sinuous line from lower angle of cell to inner margin ; postmedial line indistinct, double, the lines widely separated, the inner line minutely dentate, the outer even, bent outwards below costa and incurved below vein 4 ; subterminal line indistinct, greyish, defined on inner side by dark brown, angled outwards at vein 7, excurved at middle, then incurved ; a terminal series of black points ; cilia with a dark brown line near base. Hind wing white, the veins of terminal area irrorated with brown ; a slight discoidal spot, traces of a diffused subterminal line and terminal series of dark striæ ; cilia with a slight brownish line through them from apex to vein 2 ; the underside with the costal area suffused with brown, a blackish discoidal spot and curved subterminal line from costa to vein 4.

Hab. Britain, Leech Coll.; France; Germany, Zeller, Frey, and Leech Colls.; Austria; Hungary; Switzerland; Italy, Savoy (*Hampson*); ? Sicily ; Russia, Livonia, Zeller Coll., Urals ; Armenia ; E. Turkestan, Ili; E. Siberia, Amurland, Ussuri, Corea. *Exp.* 30–34 millim.

Larva. Meyr. Brit. Lep. p. 122 ; Barrett, Lep. Brit. v. p. 282, pl. 220. f. 3. Brown or grey-brown ; dorsal line paler with interrupted dark edges; subdorsal series of blackish sagittate marks ; spiracular line obscurely darker ; head brown with dark freckles. Food-plants : *Sedum*, *Salix*, *Rubus*, &c. 9–10.

4004. **Athetis æschria**, n. sp. (Plate CXXX. fig. 31.)

♂. Head and thorax reddish brown mixed with black ; palpi with the 2nd joint black at sides ; tarsi black ringed with white ; abdomen greyish suffused with fuscous brown. Fore wing reddish brown thickly irrorated with black ; subbasal line black, waved, from costa to submedian fold ; antemedial line black, slightly oblique and very minutely dentate ; orbicular and reniform fuscous, undefined, the former round, the latter elliptical ; postmedial line indistinct, blackish, slightly defined on outer side by ochreous, bent outwards below costa, then minutely waved, oblique below vein 4, with small black spot at costa ; faint traces of a dark subterminal line excurved at middle ; a terminal series of slight dark points. Hind wing whitish tinged with ochreous and irrorated with brown, the apex suffused with brown ; the veins, a slight discoidal lunule

and fine terminal line brown; the underside with the costal area strongly irrorated with brown, a dark discoidal lunule.

Hab. Cape Colony, Deelfontein (*Sloggett*), 1 ♂ type. *Exp.* 28 millim.

4005. Athetis nitens.

Caradrina nitens, Saalm. Lep. Madag. p. 276, f. 232 (1891).

Head and thorax dark red-brown; palpi black-brown; abdomen brown mixed with greyish. Fore wing red-brown tinged with grey and irrorated with blackish; subbasal line represented by indistinct double dark striæ from costa; antemedial line indistinct, double, obliquely excurved; orbicular and reniform faint dark marks, the latter with ochreous point on its outer edge; an indistinct oblique sinuous dark line from lower angle of cell to inner margin; postmedial line very indistinct, bent outwards below costa, then oblique, minutely waved, with traces of another line beyond it and some pale points on costa; subterminal line represented by a series of faint pale points defined by black on inner side, very slightly angled outwards at veins 7, 6 and excurved at middle; a fine black terminal line and fine pale line at base of cilia. Hind wing whitish suffused with brown, the terminal area darker, a fine dark terminal line and ochreous line at base of cilia; the underside white strongly irrorated with dark brown, a blackish discoidal spot, curved postmedial line, and terminal series of slight lunules.

Hab. Br. E. Africa, Masailand, E. Quaso (*Betton*), 2 ♂, 2 ♀, Uganda Ry., Mile 478 (*Betton*), 1 ♀; Madagascar, Betsileo. *Exp.* 26–28 millim.

4006. Athetis funesta.

Caradrina funesta, Staud. Stett. ent. Zeit. 1888, p. 256 (Oct. 1888); id. Rom. Mém. vi. p. 489, pl. 8. f. 10; id. Cat. Lep. pal. p. 198.
Acosmetia lugubris, Græs. Berl. ent. Zeit. 1888, p. 351 (Feb. 1889).
Glottula squalida, Leech, P. Z. S. 1889, p. 490, pl. 52. f. 3.

Head and thorax fuscous brown mixed with some grey; abdomen grey suffused with fuscous. Fore wing fuscous brown slightly mixed with grey; antemedial line indistinct, greyish, slightly angled outwards below costa and inwards on vein 1; orbicular a small rather oblique elliptical black spot slightly defined by grey; reniform a small black lunule defined by grey on outer side; traces of a dark medial shade; postmedial line blackish slightly defined by grey on outer side, bent outwards below costa, then minutely dentate, incurved below vein 4; subterminal line greyish slightly defined by fuscous on inner side, excurved below vein 7 and at middle; a terminal series of slight black striæ. Hind wing greyish suffused with fuscous brown; the underside fuscous brown slightly mixed with grey, an indistinct blackish discoidal lunule and traces of a rather diffused curved postmedial line.

Hab. E. Siberia, Amurland, 1 ♂, 1 ♀, Ussuri; Japan, Oiwake (*Pryer*), 1 ♂, 3 ♀ type *squalida*. *Exp.* 32–34 millim.

4007. Athetis gluteosa.

Caradrina gluteosa, Treit. Schmett. Eur. x. ii. p. 80 (1835); Hffm. Gr. Schmett. Eur. ed. ii. pl. 44. f. 18; Staud. Cat. Lep. pal. p. 198.
Hydrilla uliginosa, Boisd. Ind. Meth. p. 138 (1840); Herr.-Schäff. Eur. Schmett., Noct. ff. 293, 294.
Caradrina grisescens, Pouj. Bull. Soc. Ent. Fr. 1887, p. clvii.

♂. Head and thorax reddish brown tinged with grey; palpi black-brown, pale at tips; pectus and legs brown; abdomen whitish tinged with red-brown. Fore wing glossy greyish ochreous irrorated with brown, the terminal area suffused with red-brown; subbasal line brown, from costa to median nervure; antemedial line brown, rather near base, oblique, waved; orbicular a dark point; reniform small, brown, with somewhat darker outline; a medial brown shade, oblique from costa to reniform, then waved; postmedial line dark, strongly bent outwards below costa, then dentate and produced to points on the veins, oblique below vein 4; subterminal line pale defined on inner side by brown, angled outwards at vein 7 and oblique below vein 3; a terminal series of dark striæ; cilia with slight greyish line near tips. Hind wing whitish tinged with red-brown especially on terminal area from apex to vein 2; the underside with the costal area suffused and irrorated with brown, a slight dark discoidal spot, traces of a diffused postmedial line from costa to discal fold and a fine dark terminal line.

♀, Head, thorax, and fore wing rather greyer, the last with the pale subterminal line more prominent.

Hab. Belgium; Germany; Austria, Tirol, Carinthia; Hungary, Leech Coll.; Switzerland, Valais; S. Russia; Armenia; W. Turkestan, Ferghana; E. Turkestan, Ili; Mongolia, Urga; Tibet, Kuku-nor, Amdo; E. Siberia, Dahuria, Ussuri; Corea, Gensan (*Leech*), 1 ♀; W. China, Moupin. *Exp.* ♂ 32–36, ♀ 26–28 millim.

Larva. Kirby, Butt. & Moths Eur. p. 175; Hffm. Raup. p. 110.

Grey, with indistinct pale dorsal and subdorsal lines with oblique dark streaks between them. Food-plants: Low-growing herbs. 3.

4008. Athetis tarda. (Plate CXXX. fig. 32.)

Caradrina tarda, Guen. Noct. i. p. 243 (1852); Smith, Cat. Noct. N. Am. p. 195.
Anorthodes prima, Smith, Trans. Am. Ent. Soc. xviii. p. 115 (1891); id. Cat. Noct. N. Am. p. 198.

Head and thorax reddish brown slightly tinged with grey; palpi dark brown, pale at tips; abdomen greyish suffused with rufous. Fore wing pale glossy red-brown tinged with grey, the terminal area rather darker; subbasal line blackish, curved, from costa to median nervure; antemedial line blackish, angled outwards below costa, incurved in cell, then oblique; orbicular a rather elongate black point; reniform a faint dark bar; medial line rather indistinct, oblique from costa to reniform, sinuous from cell to inner

margin; postmedial line blackish, oblique from costa to vein 6, then dentate and produced to points on the veins, incurved below vein 4; subterminal line whitish, defined on inner side by dark brown suffusion, excurved below vein 7 and at middle and incurved at submedian fold. Hind wing greyish suffused with brown, the apical area slightly darker; the underside with the costal area suffused and irrorated with brown, a dark discoidal lunule and faint diffused postmedial line from costa to vein 4.

Hab. U.S.A., Distr. of Columbia, Washington, 1 ♂, Ohio, Illinois, Quincy (*Poling*), 1 ♂, 1 ♀, W. Virginia, Florida. *Exp.* 26–30 millim.

Larva. Head small, thickly reticulated with dark brown. Body robust, joint 13 enlarged; obscure brown with a narrow linear whitish dorsal line; a series of faint oblique subdorsal streaks, the dorsum reddish-shaded, with brown triangular spots on the posterior edges of the segments; a large brown lateral spot on joint 13; substigmatal band broad, pale, with a series of brown spots below; cervical shield concolorous.—H. G. D.

4009. Athetis smintha. (Plate CXXXI. fig. 1.)

Caradrina smintha, Hmpsn. Ann. S. Afr. Mus. ii. p. 305 (1902).

♂. Head and thorax reddish brown tinged with grey; abdomen rufous, whitish at base. Fore wing grey-brown with slight dark irroration; subbasal line indistinct, blackish, from costa to submedian fold; antemedial line black, interrupted, oblique, sinuous; orbicular a black point; reniform slightly defined by black at sides only; traces of a dark medial shade, oblique from costa to lower angle of cell, then inwardly oblique; postmedial line blackish, bent outwards below costa, then produced to slight streaks on the veins; excurved to vein 4, then oblique; subterminal line faintly defined by fuscous on inner side, angled outwards at vein 7 and excurved at middle; a terminal series of slight black striæ; a fine pale line at base of costa. Hind wing white, the costal area suffused with brown; the underside with the costal area irrorated with brown towards apex, a slight discoidal point.

♀. Hind wing with the terminal area more or less suffused with fuscous.

Hab. Natal, Maritzburg (*Burnup*), 1 ♂; C. Colony, Transkei (*Miss F. Barrett*), 1 ♂, 1 ♀ type. *Exp.* 28–36 millim.

Larva. Greyish thickly mottled with brown and with pale segmental bands; subdorsal line indistinct, pale, edged by black marks above, with more prominent marks on 2nd somite and small pale spot on 3rd somite; lateral line indistinct, pale, edged with brown above and with brown marks above it; stigmata blackish; ventral surface paler; head red-brown.

4010. Athetis aspersa.

Caradrina aspersa, Rmbr. Ann. Soc. Ent. Fr. 1834. p. 385, pl. 8. f. 3; Dup. Lép. Fr., Suppl. iii. pl. 29. f. 3; Herr.-Schäff. Eur. Schmett., Noct. f. 458; Frr. Neue Beitr. pl. 467. ff. 1, 2; Staud. Cat. Lep. pal. p. 197.
Caradrina anceps, Herr.-Schäff. Eur. Schmett. ii. p. 209, Noct. f. 417 (1845).

Head and thorax whitish mixed with some brown and fuscous; palpi black, white at tips; antennæ blackish except at base; tarsi black ringed with white; abdomen white irrorated with brown. Fore wing whitish tinged with red-brown and thickly irrorated with dark brown; subbasal line represented by a black point on costa and striga from cell; antemedial line very indistinct, oblique, sinuous, with black spot at costa; orbicular represented by a brown point; reniform very narrow, defined by brown and with some whitish on its inner and outer sides; postmedial line indistinct, double, with small spot at costa, bent outwards below costa, then the inner line dentate, oblique below vein 4 and angled outwards at vein 1, some pale points beyond it on costa; subterminal line represented by a series of white points defined on inner side by fuscous, excurved below vein 7 and at middle; a terminal series of black points; cilia with a fine yellowish line at base. Hind wing white, the termen suffused with pale brown; cilia white; the underside with the costal area and termen irrorated with brown, a small discoidal spot.

Hab. S. France; Austria, Tirol; Hungary, Leech Coll.; Switzerland, Valais; Italy, Liguria; ? Sicily; Armenia; Asia Minor, Pontus, 1 ♂, 1 ♀, Taurus; Syria. *Exp.* 34 millim.

4011. Athetis maculatra. (Plate CXXXI. fig. 2.)

Caradrina maculatra, Lower, P. Linn. Soc. N. S. W. xxvi. p. 651 (1902).

♀. Head and thorax white tinged with pale purplish brown and irrorated with a few black scales; palpi with black patch at side of 2nd joint; tarsi fuscous ringed with white; abdomen pale grey-brown. Fore wing pale purplish grey tinged with brown and sparsely irrorated with black; subbasal line black, from costa to submedian fold; antemedial line indistinct, black, dentate, rather oblique, with traces of another dentate line before it; orbicular a black point; reniform a very indistinct minute blackish lunule; medial line indistinct, curved; postmedial line very indistinct, bent outwards below costa, excurved to vein 4, then oblique, waved, with traces of another curved line beyond it with prominent rather elongate black spot on it at discal fold; subterminal line faintly defined by brown on inner side and very slightly excurved below vein 7 and at middle; a terminal series of minute black spots. Hind wing white, the veins, costal and inner areas, and termen tinged with ochreous brown; the underside with the costal area slightly

irrorated with brown, a slight discoidal point and postmedial series of points on the veins from costa to vein 4.

Hab. Queensland, 1 ♂. *Exp.* 32 milllim. Type † in Coll. Lower.

4012. Athetis bimacula.

Nebrissa bimacula, Wlk. Journ. Linn. Soc., Zool. vi. p. 194 (1862); Swinh. Cat. Het. Mus. Oxon. ii. p. 41, pl. 1. f. 22.
Caradrina terminata, Hmpsn. J. Bomb. Soc. Nat. Hist. xi. p. 444 (1897).

♂. Head, thorax, and abdomen whitish irrorated with purplish brown; palpi black, white at tips; antennæ blackish; tarsi fuscous ringed with white. Fore wing ochreous white slightly irrorated with purplish brown; subbasal line blackish, curved, from costa to submedian fold; antemedial line indistinct, oblique, sinuous; orbicular a black point; reniform represented by two obliquely placed dark points; medial line dark, diffused, sinuous, oblique towards costa; postmedial line represented by a series of blackish points with dentate line between them, oblique to vein 7 and slightly angled inwards at discal and submedian folds; terminal area suffused with dark reddish brown, its inner edge running obliquely from costa before apex to discal fold in which there is a blackish spot beyond postmedial line; traces of a diffused dark subterminal line oblique from apex to vein 6 and excurved at middle; a terminal series of minute black lunules; a fine pale line at base of cilia. Hind wing whitish tinged with brown especially on the veins and terminal area; a slight brown terminal line; cilia whitish with a brown line near base from apex to vein 2; the underside with the costal area irrorated with brown, a small discoidal spot, postmedial series of minute streaks on the veins, and terminal series of striæ.

♀. Head, thorax, abdomen, and fore wing more thickly irrorated with purplish brown.

Hab. Bhután (*Dudgeon*), 1 ♂ type *terminata*; Borneo, Sarawak (*Wallace*), 1 ♂; Philippines, Luzon, Benquet Prov. (*McGregor*), 2 ♀. *Exp.* 24–30 m.llim.

4013. Athetis maurella.

Caradrina maurella, Staud. Stett. ent. Zeit. 1888, p. 255; id. Rom. Mém. vi. p. 489, pl. 8. f. 9; id. Cat. Lep. pal. p. 198.

♂. Head and thorax dark brown mixed with some grey especially on head; palpi black-brown, whitish at tips; pectus and legs black-brown, the tarsi with slight pale rings; abdomen brown, the ventral surface darker. Fore wing dark brown with a cupreous gloss and irrorated with grey; traces of a sinuous subbasal line from costa to submedian fold; antemedial line blackish, oblique, sinuous, excurved below costa and above inner margin; claviform and orbicular absent; reniform an ill-defined blackish spot; an indistinct diffused dark medial shade; postmedial line blackish slightl

defined by grey on outer side, slightly bent outwards below costa, obliquely excurved to vein 4, then sinuous, some white points beyond it on costa; subterminal line faint, pale, angled outwards at vein 7, then minutely waved; cilia greyish with a faint dark line through them. Hind wing pale suffused with brown, a fine whitish line at base of cilia; the underside whitish irrorated with brown, the costal and terminal areas brown irrorated with some white, a slight discoidal spot and indistinct diffused postmedial line.

Hab. E. Siberia, Amurland, 1 ♂, Ussuri. *Exp.* 32 millim.

4014. **Athetis hyperæschra**, n. sp. (Plate CXXXI. fig. 3.)

Head and thorax dull reddish brown mixed with dark brown; antennæ blackish; tarsi blackish with pale rings; abdomen greyish brown. Fore wing dull reddish brown irrorated with fuscous, the medial and terminal areas rather darker; subbasal line represented by blackish points below costa and cell; antemedial line blackish, indistinct, oblique, sinuous; orbicular absent; reniform very indistinct with faint pale centre defined by fuscous; traces of a dark medial line, oblique from costa to subcostal nervure; postmedial line diffused, blackish, oblique from costa to vein 6 just beyond the reniform, then inwardly oblique and minutely waved; subterminal line indistinct, pale, slightly defined by fuscous suffusion on inner side, somewhat angled outwards at vein 7 and excurved at middle; a terminal series of slight dark striæ; a fine pale line at base of cilia. Hind wing whitish suffused with brown; cilia ochreous white; the underside ochreous whitish thickly irrorated with brown, traces of a discoidal spot and diffused curved postmedial line.

Hab. Br. E. Africa, Munisu (*Lord Delamere*), 1 ♂, Gwelil (*Betton*), 3 ♀ type. *Exp.* 32 millim.

4015. **Athetis variana.**

Radinacra variana, Swinh. P. Z. S. 1886, p. 444, pl. 40. f. 10; Hmpsn. Moths Ind. ii. p. 266.

♀. Head, thorax, and abdomen ochreous whitish slightly tinged with brown; tarsi fuscous ringed with white. Fore wing greyish tinged with rufous and slightly irrorated with brown; subbasal line blackish, slightly curved, from costa to submedian fold; antemedial line blackish, oblique, strongly sinuous; orbicular absent; reniform defined at sides by fuscous; a rather diffused blackish medial line, oblique from costa to reniform, incurved from cell to inner margin; postmedial line indistinct, bent outwards below costa, then minutely dentate, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line very indistinct, pale, slightly defined on inner side by brown suffusion, excurved below vein 7 and at middle; a fine dark terminal line and whitish line at base of cilia. Hind wing whitish, tinged with

ochreous brown especially on the veins, costal and terminal areas; a slight brown terminal line; cilia yellowish white with a faint brown line through them; the underside with the costal and terminal areas irrorated with brown, a dark discoidal lunule.

Hab. Bombay (*Swinhoe*), 1 ♀ type. *Exp.* 16 millim.

4016. Athetis gilva.

Agrotis gilva, Donz. Ann. Soc. Ent. Fr. 1837, p. 473, pl. 18. f. 12; Geyer, Eur. Schmett., Noct. f. 877; Dup. Lép. Fr., Suppl. iii. p. 461, pl. 40. ff. 5, 6; Herr.-Schäff. Eur. Schmett., Noct. ff. 410, 411; Staud. Cat. Lep. pal. p. 197.

♀. Head white; palpi fuscous except at tips; antennæ fuscous except at base; thorax grey mixed with brown; legs tinged with fuscous; abdomen grey tinged with brown. Fore wing whitish irrorated and suffused with pale fuscous; subbasal line represented by a slight blackish spot on costa; antemedial line indistinct, oblique, fuscous with blackish spot at costa; orbicular with hardly traceable dark outline, small, round; reniform an indistinct fuscous lunule; faint trace of a dark medial line; postmedial line indistinct, dark, slightly defined by whitish on outer side and with blackish spot at costa, slightly bent outwards below costa, then sinuous, incurved below vein 3; subterminal line very faint, whitish, excurved below costa and at middle and bent outwards to tornus; cilia white, tinged with ochreous at base and with dark lines near base and at middle. Hind wing whitish tinged with brown, the veins, costal area, and termen tinged with pale brown; cilia white with brown line near base except towards tornus; the underside white, the veins, costal area, and termen tinged with brown, a slight discoidal spot.

Hab. France. Alps; Austria, Tirol; Switzerland, Engadine, 1 ♀; Spain, Andalusia. *Exp.* 38 millim.

*4017. Athetis drasteroides. (Plate CXXXI. fig. 4.)

Caradrina drasteroides, Smith, Can. Ent. xxxv. p. 13 (1903).

♂. Head, thorax, and abdomen creamy white. Fore wing creamy white irrorated with black, the postmedial and terminal areas greyer; subbasal line absent or represented by a point on costa; antemedial line represented by a few black scales and a point on costa, excurved at median nervure and angled inwards at vein 1; claviform and orbicular absent; reniform oblique, dusky, undefined, obscured by the medial shade which is oblique from costa to lower angle of cell, then approximated to the postmedial line, which is blackish defined by whitish on outer side, a black spot on it at costa, excurved to vein 4, then oblique; subterminal line whitish, defined on inner side by a faint dark shade at costa, very slightly excurved below vein 7; a terminal series of black points, sometimes absent. Hind wing pure white; a dark discoidal point sometimes

present and some dark scales at base of cilia; the underside with incomplete postmedial line.

Hab. U.S.A., S. California, Arizona. *Exp.* 30–34 millim. This species is unknown to me, figured from a drawing from type in Coll. J. B. Smith.

*4018. Athetis fixseni.

Pseudophia fixseni, Christ. Hor. Soc. Ent. Ross. xvii. p. 113 (1883); id. Rom. Mém. ii. pl. 4. f. 6; Staud. Cat. Lep. pal. p. 196.

♂. Head, thorax, and abdomen pale yellow, the last slightly irrorated with brown on dorsum; palpi with some black at sides; antennæ blackish; tarsi black ringed with yellowish white. Fore wing pale yellow, a waved blackish subbasal line from costa to submedian fold; antemedial line reddish brown, expanding into small black spots at costa and submedian fold, oblique, waved; claviform and orbicular absent; reniform with slight blackish point in centre and faintly defined by blackish, minute; postmedial line reddish brown, with small black spot at costa, slightly bent outwards below costa, then dentate, oblique below vein 4; subterminal line defined by slight dark suffusion on inner side, more prominent at costa where there is a pale point on it, angled outwards at veins 7, 6 and excurved at middle; a terminal series of black points; cilia yellowish at base, white at tips. Hind wing yellowish white, the terminal area suffused with reddish brown narrowing to tornus; cilia white; the underside white, the costal area tinged with yellow, the terminal area suffused with brown from apex to submedian fold, a faint discoidal point.

♀. Fore wing with the ante- and postmedial lines much stronger; the reniform a blackish lunule; a rather diffused reddish medial line expanding into a black spot at costa, obliquely incurved to lower angle of cell, then waved.

Hab. Armenia; S. Palestine; W. Turkestan, Aschabad, Sumbar in Coll. Püngeler. *Exp.* 28 millim.

4019. Athetis casearia.

Caradrina casearia, Staud. Iris, xii. p. 375, pl. 5. f. 1 (1899); id. Cat. Lep. pal. p. 196.

♂. Head, thorax, and abdomen white with a faint yellowish tinge; palpi with the 2nd joint irrorated with fuscous at sides; antennæ tinged with rufous. Fore wing yellowish white very slightly irrorated with red-brown; subbasal and antemedial lines absent; orbicular a small round rufous spot, the reniform a slight rufous lunule; postmedial line very indistinct, rufous, bent outwards below costa, excurved to vein 4, then incurved; subterminal line represented by rather diffused brown scales, slightly angled outwards at vein 7; a terminal series of black points. Hind wing pure

white; the underside with the costal area slightly tinged with yellowish, a slight dark discoidal striga.

Hab. PALESTINE, Jordan, 1 ♂. *Exp.* 28 millim.

4020. Athetis melanurina. (Plate CXXXI. fig. 5.)

Agrotis melanurina, Staud. Cat. Lep. pal. p. 146 (1901).

Head and thorax ochreous white; palpi fuscous at sides; abdomen ochreous with more or less developed fuscous dorsal bands. Fore wing ochreous white; the costal edge fuscous at base; subbasal line represented by a black point on costa and faint traces of a line to submedian fold; traces of a minutely waved antemedial line with a black point at costa; traces of a waved line from lower angle of cell to inner margin; postmedial line very indistinct, irregularly waved, arising from a black spot at costa, strongly bent outwards below costa, excurved to vein 4, then incurved; terminal area fuscous black with a fine white line at base of cilia. Hind wing white, the terminal area suffused with fuscous except at apex and towards tornus; cilia fuscous with a fine white line at base.

Hab. PALESTINE, 1 ♂, 1 ♀. *Exp.* ♂ 30, ♂ 34 millim.

Genus **PROMETOPUS.**

	Type.
Prometopus, Guen. Noct. i. p. 38 (1852)	*inassueta.*

Proboscis fully developed; palpi with the 2nd joint upturned, reaching about to middle of frons, the 3rd moderate, porrect; frons with short truncate conical prominence with somewhat raised edges and corneous plate below it; eyes large, round; antennæ of male somewhat laminate and minutely ciliated; thorax clothed with rough hair and hair-like scales, the prothorax with spreading crest, the metathorax with divided crest; tibiæ moderately fringed with hair; abdomen without crests. Fore wing rather narrow, the apex rectangular, the termen somewhat excised below apex and excurved at middle; vein 3 from before angle of cell; 5 from just above angle; 6 from below upper angle; 7, 8, 9, 10, stalked; 11 from cell. Hind wing with veins 3, 4, and 6, 7 shortly stalked; 5 obsolescent from middle of discocellulars; 8 anastomosing with the cell near base only.

A. Fore wing with the reniform white or defined by white.	
a. Fore wing with the ground-colour olive-yellow.	
a^1. Fore wing with the reniform strongly constricted at middle	*flavicollis.*
b^1. Fore wing with the reniform not constricted at middle	*albistigma.*
b. Fore wing with the ground-colour grey.	
a^1. Fore wing with the orbicular present	*horologa.*
b^1. Fore wing with the orbicular absent	*inassueta.*
B. Fore wing with the reniform not white or defined by white	*nodyna.*

4021. Prometopus flavicollis.

Erastria flavicollis, Leech, P. Z. S. 1889, p. 525, pl. 53. f. 4.

♂. Head white irrorated with black; palpi and antennæ black-brown; tegulæ olive-yellow; thorax brown mixed with whitish;

pectus and legs black-brown, the tarsi ringed with white; abdomen brown. Fore wing olive-yellow mostly suffused and irrorated with black-brown to submedian fold, the inner area pale reddish brown; subbasal line represented by slight double dark striæ from costa; a slight black streak below base of cell; antemedial line double filled in with yellowish, angled outwards below costa, incurved in cell and obsolescent on inner area; orbicular absent; reniform a white patch extending to costa, defined at sides by black above, excised at middle and with dark mark on lower edge; postmedial line indistinctly double filled in with yellowish, slightly bent outwards below costa, then minutely dentate, oblique to vein 4, then inwardly oblique, angled inwards in submedian fold and obsolescent on inner area, some white points beyond it on costa; subterminal line oblique and whitish towards costa, then indistinct, defined on each side by some black suffusion, minutely waved and obsolescent on inner area; a blackish terminal line except towards tornus with some whitish scales on inner side. Hind wing greyish suffused with brown; cilia whitish at tips; the underside whitish tinged with brown, the costal area irrorated with brown, a brown discoidal spot and curved minutely waved postmedial line.

Hab. Japan, Oiwake (*Pryer*), 1 ♂ type, Tsu-shima (*Holt*), 1 ♂. *Exp.* 22–30 millim.

4022. **Prometopus albistigma.** (Plate CXXXI. fig. 6.)

Caradrina albistigma, Swinh. Trans. Ent. Soc. 1904, p. 139.

Head and thorax olive-yellow mixed with white, the tegulæ with diffused brown bands near base and tips, the patagia mostly brown, palpi black-brown, whitish in front and at tips; pectus and legs mostly dark brown; abdomen dark brown, the anal tuft ochreous white. Fore wing olive-yellow, the costal edge blackish, the inner area irrorated with brown; subbasal line represented by a whitish point on costa; a slight black streak below base of cell; antemedial line represented by a whitish point on costa and an indistinct, double, minutely waved dark line from cell to inner margin; orbicular absent; reniform an oblique oblong white patch extending to costa; postmedial line very indistinct, pale, minutely waved and excurved from costa to vein 4, then oblique, dark, waved, some white points beyond it on costa and blackish streaks from beyond it to termen in discal fold and below vein 3; a terminal series of small blackish lunules; cilia black-brown with slight white lines at base and middle. Hind wing greyish suffused with brown; the underside paler, the costal area irrorated with brown, a dark discoidal point, oblique somewhat dentate postmedial line, and terminal series of small lunules.

Hab. Singapore (*Ridley*), 2 ♂, 1 ♀; Borneo, Malang (*Shelford*), 1 ♀, Sandakan (*Pryer*), 1 ♂ type. *Exp.* 30–32 millim.

*4023. Prometopus horologa. (Plate CXXXI. fig. 7.)

Orthosia horologa, Meyr. Trans. Ent. Soc. 1897, p. 367.

♀. Head, thorax, and abdomen brown mixed with black and slightly with grey; pectus and ventral surface of abdomen pale. Fore wing clothed with grey, brown, and black scales; an indistinct obliquely waved black antemedial line; orbicular indistinct, rounded, with brownish centre, white annulus and black outline; reniform strongly constricted at middle, white with brownish centres to upper and lower lobes; the postmedial line black defined by whitish on outer side, strongly bent outwards below costa, then minutely waved; some white points on apical part of costa; an indistinct sinuous subterminal line with some dentate black marks on it; some black points on termen. Hind wing fuscous, whitish towards base; the underside white with the terminal area fuscous.

Hab. Queensland, Brisbane in Coll. Turner. *Exp.* 30 millim.

4024. Prometopus inassueta.

Prometopus inassueta, Guen. Noct. i. p. 38 (1852).
Bryophila dorsivaria, Wlk. xv. 1648 (1858).
Agrotis scotti, Feld. Reis. Nov. pl. 110. f. 16 (1874).
Caradrina chromoneura, Turner, Pr. Linn. Soc. N. S. W. xxvii. p. 86 (1902).
Erastroides lichnomima, Turner, Pr. Linn. Soc. N. S. W. xxvii. p. 110 (1902).

Head, thorax, and abdomen grey mixed with black and brown; tibiæ and tarsi banded black and white. Fore wing grey tinged with green and irrorated with black and suffused at base and on disk with brown; a curved black subbasal line from costa to submedian fold, then bent outwards above vein 1; an oblique

Fig. 96.—*Prometopus inassueta*, ♂. ½.

black antemedial line, angled inwards on vein 1; reniform outlined in white and constricted at middle; a curved crenulate black postmedial line angled inwards in submedian fold; some whitish points on costa towards apex; an obscure dentate subterminal line and black streaks in the interspaces before termen and terminal series of points. Hind wing fuscous brown: the under-

side whitish irrorated with fuscous; a prominent black discoidal spot; a dentate postmedial line bent outwards below costa and incurved below vein 3.

Hab. Queensland, Brisbane (*Turner*), 2 ♀; Tasmania (*Butler*), 1 ♂, 1 ♀, type *dorsivaria*; Australia (*Harrington*), 1 ♀. *Exp.* 34–44 millim.

*4025. Prometopus nodyna. (Plate CXXXI. fig. 8.)

Prometopus nodyna, Turner, Tr. R. Soc. S. Austr. xxviii. p. 215 (1904).

♂. Head and thorax grey mixed with black; palpi with black band on 2nd segment; tibiæ and tarsi banded with black; abdomen brownish grey with the dorsal crests blackish. Fore wing grey thickly irrorated with black; a diffused irregular black fascia above base of vein 1; the subbasal line represented by an oblique black striga from costa, with an oblique blackish band beyond it from costa to submedian fold; antemedial line indistinct, waved, oblique; orbicular rounded, incompletely defined by black points; a broad oblique medial black band; reniform large, brownish defined by a waved blackish line; postmedial line black, minutely dentate, bent outwards below costa, excurved to vein 4, then incurved; subterminal line greyish, angled outwards at vein 7 and excurved at middle, defined on outer side by small dentate blackish marks, stronger above tornus; cilia chequered grey and blackish. Hind wing grey tinged with fuscous brown; the underside whitish, the costal and terminal areas irrorated with fuscous, a medial fuscous bar on costal area and waved postmedial line.

Hab. Queensland, Brisbane (*Turner*), type †♂ in Coll. Turner. *Exp.* 32 millim.

Genus EREMOCHROA.

	Type.
Eremochroa, Meyr. Trans. Ent. Soc. 1897, p. 368	*psammias.*

Proboscis absent; palpi porrect, extending about the length of head and moderately fringed with hair below; frons with truncate conical prominence with raised edges and corneous plate below it; eyes large, round; antennæ of male bipectinate with long branches to apex; thorax clothed chiefly with scales, the prothorax without crest, the metathorax with spreading crest; build slender; tibiæ smoothly scaled; abdomen without crests, long. Fore wing long and narrow, the costa nearly straight, the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell to middle.

A. Fore wing mostly suffused with rufous.
  a. Fore wing with the orbicular very indistinct, the claviform reduced to a point ..... *psammias.*
  b. Fore wing with the orbicular distinct.
    a[1]. Fore wing with the claviform rather short, the lines moderately distinct ..... *thermidora.*

*b*¹. Fore wing with the claviform narrow and elongate, the lines very distinct ..... *macropa.*
B. Fore wing brownish grey, the submedian fold and stigmata tinged with rufous ..... *paradesma.*
C. Fore wing white irrorated with brown and not tinged with rufous ..... *alphitias.*

*4026. Eremochroa psammias. (Plate CXXXI. fig. 9.)

Eremochroa psammias, Meyr. Trans. Ent. Soc. 1897, p. 368.

♂. Head and thorax ochreous white slightly tinged with brown; pectus, legs, and abdomen white tinged with ochreous. Fore wing ochreous white slightly tinged with rufous; traces of a white antemedial line, oblique from costa to submedian fold, then inwardly oblique, with black point on its outer edge in submedian fold and some black scales at inner margin; orbicular and reniform hardly traceable and very faintly defined by brown, the former round; postmedial line very indistinct, whitish defined by a few brownish scales, oblique from costa to vein 6, obliquely incurved below vein 4; traces of a curved whitish subterminal line. Hind wing white tinged with reddish brown except on costal area; cilia white; the underside white tinged with ochreous.

Hab. W. Australia, Carnarvon, type † ♂ in Coll. Meyrick. *Exp.* 32 millim.

4027. Eremochroa thermidora, n. sp. (Plate CXXXI. fig. 10.)

♂. Head and thorax white tinged with rufous; antennæ and a bar between them rufous; tegulæ except at tips and metathorax rufous; palpi rufous; tibiæ and tarsi rufous banded with whitish; abdomen white tinged with rufous. Fore wing ochreous white almost wholly suffused and irrorated with fiery red, the terminal area grey-white; subbasal line represented by a faint whitish striga from costa; antemedial line indistinct, brown defined by whitish on inner side, waved, angled inwards at vein 1; claviform narrow, defined by brown; orbicular and reniform small, with slight whitish annuli indistinctly defined by brown, the former diamond-shaped with red centre, the latter strongly constricted at middle and with dark marks in upper and lower parts; a diffused dark medial line oblique from costa to lower angle of cell, then approximated to the postmedial line, which is indistinct, pale, minutely waved, excurved from costa to vein 4, then oblique; subterminal line whitish defined by fiery red on inner side, dentate, rather obliquely curved; a fine brown terminal line; cilia rufous at base, whitish at tips. Hind wing white slightly tinged with ochreous; a slight brown terminal line.

Hab. W. Australia, Sherlock R. (*Clements*), 6 ♂ type. *Exp.* 34–38 millim.

4028. Eremochroa macropa. (Plate CXXXI. fig. 11.)

Praxis macropa, Lower, Pr. Linn. Soc. N. S. W. xxii. p. 16 (1897).

♂. Head and thorax white irrorated with brown, the tips of tegulæ and the metathoracic crest red-brown; palpi dark brown except at base; legs banded with brown, the tarsi blackish ringed with ochreous; abdomen grey-white suffused with brown. Fore wing grey-white irrorated with brown and mostly suffused with fiery red especially in and below cell and before subterminal line; subbasal line dark defined by whitish on outer side, excurved below the cell and ending at vein 1; antemedial line dark brown defined by whitish on inner side, waved, strongly incurved at vein 1; claviform narrow and elongate, whitish defined by brown; orbicular and reniform minute, reddish white defined by black-brown, the former round, the latter a narrow bar with short streak below it; postmedial line dark brown defined by whitish on outer side, bent outwards below costa, then dentate, excurved to vein 4, then oblique; subterminal line yellow defined by fiery red on inner side, dentate and rather obliquely curved; cilia chequered brown and reddish yellow at base, whitish at tips. Hind wing greyish wholly suffused with brown; cilia brownish at base, white at tips; the underside grey tinged with brown.

Hab. N. S. Wales, Broken Hill (*Lower*, *Lyell*), 5 ♂. *Exp.* 42 millim.

4029. Eremochroa paradesma. (Plate CXXXI. fig. 12.)

Eremochroa paradesma, Lower, Pr. Linn. Soc. N. S. W. xxvi. p. 645 (1902).

♂. Head and thorax greyish tinged with reddish brown, the metathoracic crest darker brown; palpi browner at sides; abdomen whitish obscurely banded with brown. Fore wing pale grey-brown with slight dark irroration, the discal and submedian folds with a reddish ochreous tinge; subbasal line represented by dark points below costa and cell with some whitish on outer side; antemedial line brown defined by whitish on inner side, rather oblique, waved; claviform narrow, defined by brown; orbicular and reniform reddish ochreous, the former round, defined by brown and with brownish centre, the latter defined by brown at sides only and with brown mark in lower part, strongly constricted at middle; a rather diffused waved brown medial line; postmedial line formed by dark brown lunules defined by ochreous white on outer side, excurved from costa to vein 4, then oblique and excurved below submedian fold; subterminal line indistinct, whitish defined on inner side by small dentate dark brown marks, angled inwards in submedian fold; a terminal series of dark striæ; cilia chequered brown and whitish and with fine brown line through them. Hind wing white, the terminal area tinged

with ochreous brown; faint diffused brownish postmedial and subterminal lines, rather more distinct on underside.

Hab. S. Australia, Parkside (*Lower*), 1 ♂. *Exp.* 40 millim.

4030. Eremochroa alphitias.

Eremochroa alphitias, Meyr. Trans. Ent. Soc. 1897, p. 369.

Head, thorax, and abdomen glossy white slightly tinged with ochreous; palpi tinged with red-brown at sides; tibiæ and tarsi slightly banded with red-brown. Fore wing white irrorated with reddish brown; subbasal line represented by a slight striga from costa; antemedial line indistinctly double filled in with white, slightly angled outwards below costa, more strongly in submedian fold, and angled inwards on vein 1; claviform narrow, white defined by brown above; orbicular white with brown centre, elongate elliptical; reniform defined by white at sides and with

Fig. 97.—*Eremochroa alphitias*, ♂. ½.

brown marks above and below, strongly constricted at middle; postmedial line slight, brown defined by white on outer side, minutely dentate, oblique from costa to vein 6, then inwarely oblique and slightly excurved below submedian fold; a minutely waved white subterminal line; cilia chequered white and reddish brown. Hind wing white faintly tinged in parts with reddish brown; a brown terminal line; the underside with traces of diffused curved postmedial line.

Hab. Queensland, Brisbane (*Turner*), 1 ♂, 1 ♀, Dalby (*Turner*), 1 ♂; W. Australia, Roebuck Bay (*J. J. Walker*), 1 ♀; N. S. Wales (*Raynor*), 2 ♂, 2 ♀, Broken Hill (*Lower, Lyell*), 5 ♂, 10 ♀. *Exp.* 30–40 millim.

Genus **MICROPIA**, nov.

Type, *M. rhodocentra*.

Proboscis aborted, small; palpi porrect, moderately scaled, not extending beyond the large rounded frontal prominence with corneous plate below it; eyes large, round; antennæ of female ciliated; thorax clothed chiefly with scales, the metathorax with spreading crest; tibiæ smoothly scaled, the fore tarsi with small curved claw-like spines on outer side of the joints; abdomen without crests. Fore wing rather narrow, the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4, and 6, 7 stalked; 5 obsolescent from middle of discocellulars; 8 anastomosing with the cell near base only.

4031. Micropia rhodocentra.

Prometopus rhodocentra, Lower, Tr. R. Soc. S. Austr. xxvi. p. 222 (1902).

♀. Head and thorax greyish mixed with brown and tinged with rufous; abdomen whitish slightly tinged with brown. Fore wing greyish suffused with brown and irrorated with fuscous; a slight fiery red streak below base of cell; traces of an erect dark antemedial line; orbicular and reniform pale fiery red defined by blackish, the former minute, round, the latter a small lunule;

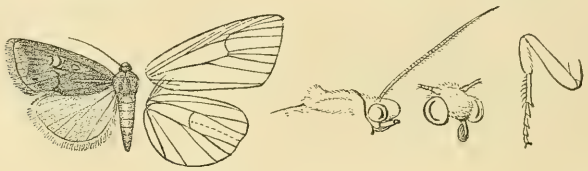


Fig. 98.—*Micropia rhodocentra*, ♀. ⅔.

postmedial line hardly traceable and excurved from costa to vein 4, incurved and double from lower edge of reniform to inner margin; traces of a subterminal series of whitish points with slight dark streaks before them; a fine terminal black line with fiery red scales before it. Hind wing white tinged with brown, the cilia white.

Hab. N. S. Wales, Broken Hill (*Lower*), 1 ♀. *Exp.* 24 millim.

Genus **OMPHALETIS**, nov.

Type, *O. florescens*.

Proboscis fully developed; palpi obliquely upturned, the 2nd joint reaching about to middle of frons and moderately fringed with scales in front, the 3rd short; frons with short truncate conical prominence with raised edges, truncate or pointed corneous process in centre, and corneous plate below it; eyes large, round; antennæ of male typically bipectinate with short branches, the apex serrate; thorax clothed chiefly with scales, the prothorax without distinct crest, the metathorax with small paired crests; tibiæ fringed with long hair, the fore tarsi with more or less developed curved claw-like spines at outer side of joints; abdomen without crests. Fore wing rather narrow, the apex rounded, the termen evenly curved and slightly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from or from below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male with moderate branches, the apex serrate.

4032. Omphaletis florescens.

Celæna florescens, Wlk. x. 268 (1856).
Miana lucasii, Butl. A. M. N. H. (5) ix. p. 89 (1882).

Head and thorax cupreous red mixed with white and some black scales; palpi white at tips; tegulæ with rufous medial line and white tips; pectus and legs whitish, the fore tibiæ and tarsi

rufous, the latter ringed with white; abdomen white with slight rufous segmental bands. Fore wing whitish suffused with greyish brown and rufous, the submedian fold with fiery red streak at base, then with yellowish streak to postmedial line; the terminal area bluish white; traces of a waved dark subbasal line from costa to submedial fold; antemedial line double, dark filled in with whitish, angled outwards below costa, then oblique, waved; orbicular minute, round, fiery red defined by blackish; reniform with reddish bar defined by blackish on inner edge, its outer part

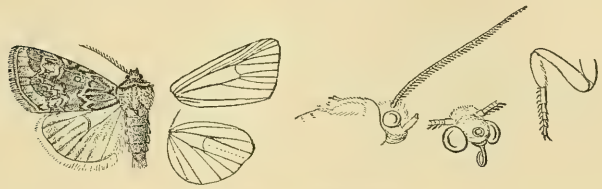


Fig. 99.—*Omphaletis florescens*, ♂. ½.

white with black mark in lower part; a dark medial line oblique from costa to lower angle of cell, then sinuous; a yellowish streak in discal fold beyond the reniform; postmedial line double filled in with yellowish, the inner line black, the outer brown, bent outwards below costa, then dentate, incurved below vein 4, some white points beyond it on costa; subterminal line whitish defined by brown on inner side and by the contrast between the postmedial and terminal areas, excurved below vein 7 and at middle and angled inwards at discal and submedian folds; a terminal series of slight black points; cilia rufous with a yellowish line at base. Hind wing white tinged with reddish brown; cilia pure white; the underside white irrorated with brown, an oblique dark discoidal lunule, obliquely curved brown postmedial line, and diffused subterminal band.

Hab. Queensland, Moreton Bay (*Diggles*), 1 ♂; N. S. Wales (*Raynor*), 4 ♂, Broken Hill (*Lower*), 3 ♂, 4 ♀; Victoria, Melbourne (*Lucas*), 1 ♀ type *lucasii*, Birchip (*Lyell*), 1 ♂; S. Australia, Adelaide (*Lyell*), 1 ♂. *Exp.* 32–40 millim.

Sect. II. Antennæ of male ciliated.

A. Frons with truncate corneous process in centre; hind wing with vein 5 from middle of discocellulars.
a. Fore wing with the terminal area paler than the postmedial area.
*a*¹. Fore wing with the reniform replaced by a triangular bidentate ochreous patch ..... *passalota*.
*b*¹. Fore wing with the reniform lunulate and produced at extremities.
*a*². Fore wing purple-grey, the end of cell and postmedial area suffused with fuscous..... *exundans*.

b^2. Fore wing grey-white largely suffused with brown except on terminal area ..... *heliosema.*

b. Fore wing with the terminal area not paler than the postmedial area.

a^1. Fore wing with wedge-shaped brown patch in and beyond end of cell, obscured by brown suffusion in female ..... *nuna.*

b^1. Fore wing without wedge-shaped brown patch in and beyond the cell.

a^2. Fore wing grey largely suffused and irrorated with fuscous ..... *melodora.*

b^2. Fore wing grey tinged with brown but not largely suffused with fuscous.

a^3. Tegulæ blackish at base ..... *metaneura.*

b^3. Tegulæ not blackish at base.

a^4. Fore wing suffused in parts with ferruginous. *sarcomorpha.*

b^4. Fore wing not suffused with ferruginous ..... *petrodora.*

c^2. Fore wing rufous.

a^3. Fore wing tinged with brown and slightly irrorated with black ..... *xerampelina.*

b^3. Fore wing not tinged with brown and strongly irrorated with black ..... *plinthina.*

*4033. Omphaletis passalota. (Plate CXXXI. fig. 13.)

Prometopus passalota, Turner, ined.

♀. Head and thorax black mixed with some white and ochreous scales; palpi with the extremities of the joints white; tegulæ whitish at base and tips; pectus white; tarsi black ringed with white; abdomen brown mixed with ochreous and white, the base and slight segmental lines white, the ventral surface white irrorated with brown and ochreous. Fore wing black mixed with grey, the terminal area paler with white and ochreous scales mixed, the veins of terminal area streaked with black; a strong black fascia below basal half of cell and a slight streak above base of inner margin; a wedge-shaped black patch in terminal half of cell with the small round white orbicular on it, followed by a triangular patch beyond the cell, its extremity bidentate; antemedial line slight, represented by a long tooth in submedian fold, then angled inwards on vein 1; postmedial line represented by a whitish striga from costa, then blackish, bent outwards below costa, defining the bidentate patch and angled inwards in submedian fold to the antemedial line, some whitish points beyond it on costa; subterminal line only defined by the contrast between the postmedial and terminal areas, and with slight black streaks before it in the interspaces, slightly excurved at vein 7; a fine black terminal line. Hind wing whitish suffused with fuscous brown; cilia white with a dark line near base from apex to vein 2; the underside white irrorated with black, a small discoidal spot, postmedial series of short streaks on the veins, and large apical blackish patch.

Hab. Victoria, Birchip, type † ♀ in Coll. Turner. *Exp.* 26 millim.

*4034. Omphaletis exundans. (Plate CXXXI. fig. 14.)

Nitocris exundans, Guen. Ent. Mo. Mag. v. p. 5 (1868).
Euplexia mamestroides, Wlk. Char. Lep. Het. p. 71 (1869).
Caradrina oxygona, Lower, Pr. Linn. Soc. N. S. W. xxvi. p. 651 (1902).
Prometopus poliophracta, Turner, Tr. R. Soc. S. Austr. xxxii. p. 57 (1908).

♂. Head and thorax pale grey irrorated with fuscous; palpi black, white in front and at tips; frons and a bar between antennæ black; tegulæ with the basal half black; tarsi fuscous with whitish rings; abdomen grey suffused with fuscous. Fore wing purple-grey irrorated with fuscous, the end of cell, area beyond it and postmedial area suffused with fuscous; a slight rufous tinge in base of submedian fold; subbasal line black, waved, from costa to submedian fold; antemedial line double, oblique, waved, angled outwards in submedian fold and inwards on vein 1; claviform absent; orbicular a small rufous spot defined by black; reniform white tinged with rufous on inner side and defined by black, its lower extremity acutely produced, a brown bar in middle and its lower part filled in with black; an indistinct oblique waved medial line; postmedial line black defined by grey on outer side, bent outwards below costa, then minutely dentate, somewhat oblique below vein 4, some grey points beyond it on costa; subterminal line only defined by the contrast between the blackish and grey areas, slightly excurved below vein 7 and at middle; a slight black terminal line; cilia fuscous with a fine yellowish line at base. Hind wing grey suffused with fuscous; cilia whitish with a fuscous line through them, wholly fuscous at apex except at base; the underside grey irrorated with fuscous, the costal area white irrorated with black, the apical area suffused with black, a slight discoidal lunule and traces of a postmedial series of slight dark streaks on the veins.

Hab. Victoria, Blackrock (*Lyell*), type † ♂ *poliophracta* in Coll. Drake, Black Forest, type † ♂ *oxygona* in Coll. Lower. *Exp.* 36 millim. Type *mamestroides* in Mus. Melbourne examined by Dr. Turner.

4035. Omphaletis heliosema. (Plate CXXXI. fig. 15.)

Prometopus heliosema, Lower, Tr. R. Soc. S. Austr. xxvi. p. 222 (1902).

♂. Head yellowish white slightly mixed with brown; palpi with fuscous marks at sides of 2nd and 3rd joints; antennæ brownish; thorax grey-white mixed with blackish; pectus whitish; legs pale brown, the tarsi fuscous with pale rings; abdomen white tinged with pale brown. Fore wing grey-white suffused with fuscous brown and slightly irrorated with black, a diffused white fascia below costa to beyond middle, the terminal area greyish ochreous; subbasal line represented by a whitish point on costa; a diffused blackish fascia below base of cell; antemedial line with whitish point on costa, obsolete to median nervure, then fine,

black slightly defined by whitish on inner side, strongly angled outwards in submedian fold and above inner margin, and with short reddish ochreous streak before it in submedian fold; orbicular minute, round, reddish ochreous defined by black suffusion before and beyond it; reniform reddish ochreous defined by black, with white mark in centre and brown mark in lower part, its upper and lower extremities strongly produced; postmedial line indistinct, fine, blackish, slightly defined by grey on outer side, bent outwards below costa, then dentate, strongly angled inwards in submedian fold and outwards on vein 1; subterminal line represented by the contrast between the postmedial and terminal areas, and with slight dentate black marks on its inner edge, incurved at discal fold and angled inwards in submedian fold; a terminal series of black striæ; cilia fuscous and greyish. Hind wing white suffused with brown; cilia white with series of brownish spots at base from apex to vein 2; the underside irrorated with brown, a black discoidal spot, diffused curved postmedial line, and terminal series of striæ.

♀. Thorax and fore wing except terminal area blacker, the whitish subcostal fascia obsolescent except towards base, the blackish fascia below the cell obscured.

Hab. N. S. Wales, Broken Hill (*Lower*), 7 ♂, 13 ♀; S. Australia, Adelaide (*Lyell*), 1 ♂. *Exp.* 24–30 millim. Type † in Coll. Lower.

4036. **Omphaletis nuna.** (Plate CXXXI. fig. 16.)

Nitocris nuna, Guen. Ent. Mo. Mag. v. p. 6 (1868).
Orthosia mesombra, Lower, Tr. R. Soc. S. Austr. xvii. p. 153 (1893).

♂. Head and thorax grey tinged with rufous; palpi black at sides towards base, whitish in front; tegulæ blackish at base; pectus whitish, the legs tinged with rufous, the tarsi fuscous ringed with whitish; abdomen whitish dorsally tinged with rufous, ventrally irrorated with fuscous. Fore wing grey tinged with rufous and slightly irrorated with brown, a wedge-shaped blackish shade from middle of cell to subterminal line from costa to vein 3; subbasal line represented by black points on costa and median nervure and red spot below the cell; the antemedial line by black points on costa, veins, and inner margin; orbicular and reniform fiery red defined by black, the former minute, round, the latter a very oblique lunule; postmedial line represented by black points on costa, veins 7 to 3 and inner margin, bent outwards below costa, some whitish points beyond it on costa; subterminal line represented by a whitish edging to the black shade, slightly angled outwards at vein 7 and obsolete below vein 3; a terminal series of black striæ defined by fiery red on inner side; cilia with a slight yellowish line at base. Hind wing semihyaline white, the apical area and veins of terminal area tinged with brown; cilia white,

brownish at apex, the underside with postmedial series of short black streaks on the veins and apical blackish patch.

♀. Thorax and fore wing suffused with grey-brown or red-brown, the triangular dark shade hardly traceable.

Hab. N. S. Wales, Broken Hill (*Lower*), 4 ♂, 6 ♀; S. Australia, Parkside (*Lyell*), 1 ♂. *Exp.* 30–34 millim. Type † *mesombra* in Coll. Lower.

4037. Omphaletis melodora.

Prometopus melodora, Lower, Pr. Linn. Soc. N. S. W. xxvi. p. 645 (1902), ♀.
Prometopus malacopis, Lower, Tr. R. Soc. S. Austr. xxvi. p. 221 (1902), ♂.

♂. Head and thorax fuscous mixed with reddish ochreous; palpi yellowish white at tips; tarsi black ringed with white; abdomen ochreous white slightly irrorated with black. Fore wing grey tinged with brown and thickly irrorated and suffused with fuscous; subbasal line double, waved, from costa to submedian fold; antemedial line double, black filled in with reddish ochreous, waved, oblique; orbicular minute, round, reddish ochreous defined by black; reniform narrow, reddish ochreous defined by black, its lower part obscured by a black mark and its lower extremity produced; a diffused dark medial line oblique from costa to median nervure; postmedial line blackish defined by ochreous on outer

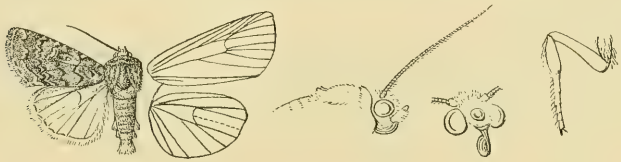


Fig. 100.—*Omphaletis melodora*, ♂. $\frac{1}{1}$.

side, double at costa, slightly bent outwards below costa, then dentate, excurved to vein 4, then incurved, some ochreous points beyond it on costa; subterminal line reddish ochreous defined by blackish on inner side, slightly angled outwards at veins 7, 6, 4, 3; a terminal series of black striæ with ochreous points on their inner side; cilia fuscous at base, grey and fuscous at tips. Hind wing white tinged with pale brown especially on the veins; a fine brown terminal line; the underside with the costal and terminal areas irrorated with brown, a small discoidal spot and postmedial series of slight streaks on the veins.

♀. Head, thorax, and fore wing slightly mixed with grey and without any reddish ochreous tinge.

Hab. N. S. Wales, Broken Hill (*Lower*), 17 ♂, 16 ♀; Victoria, Birchip (*Lyell*), 1 ♂, 1 ♀. *Exp.* 28–36 millim. Type † and type † *malacopis* in Coll. Lower.

4038. **Omphaletis metaneura.** (Plate CXXXI. fig. 17.)

Prometopus metaneura, Lower, ined.

Palpi black at base, whitish at tips; frons whitish at base, blackish above; vertex of head rufous; tegulæ black at base, white at tips; thorax white tinged with brown; pectus white; legs brownish with some blackish marks on mid tibiæ, the tarsi black ringed with white; abdomen brownish white irrorated with fuscous. Fore wing grey-white sparsely irrorated with black, the terminal area tinged with fiery red; a fiery red streak in basal half of submedian fold; subbasal line waved, black, from costa to median nervure; antemedial line represented by black points on costa, median nervure, and vein 1; orbicular and reniform defined by fiery red, the former small, round, the latter with blackish centre and white lunule on outer edge; medial black points on costa and inner margin; postmedial line represented by a series of black points with more prominent spot at costa, bent outwards below costa, excurved to vein 4, then oblique; subterminal line represented by a series of slight black points with fiery red streaks before them at middle, slightly excurved below vein 7 and at middle; a terminal series of black striæ; cilia grey mixed with black. Hind wing whitish suffused with brown; cilia white; the underside whitish slightly irrorated with black, a small discoidal spot, postmedial series of slight points on the veins, and apical blackish patch.

Ab. 1. Thorax and fore wing suffused with dark grey or fuscous.

Ab. 2. Fore wing without red streaks.

Hab. N. S. Wales, Broken Hill (*Lower*), 5 ♂, 8 ♀; Victoria, Birchip, 1 ♀. *Exp.* 30–32 millim. Type † in Coll. Lower.

*4039. **Omphaletis sarcomorpha** (Plate CXXXI. fig. 18.)

Prometopus sarcomorpha, Lower, Pr. Linn. Soc. N. S. W. xxvi. p. 646 (1902).

♀. Head and thorax grey tinged with pale rufous; palpi and lower part of frons white, the former with some black scales at sides; upper part of frons, a spot on vertex of head, and base of palpi black; legs fuscous and white; pectus and abdomen white, the latter dorsally irrorated with fuscous. Fore wing grey suffused in parts with pale ferruginous; the subbasal line black, waved, from costa to submedian fold; the antemedial line angled inwards in cell and on vein 1, acutely outwards in submedian fold and above inner margin; an indistinct irregularly waved medial line; reniform small, white, with some black scales on its edges; postmedial line dentate, strongly bent outwards below costa, then oblique; the veins of terminal area with slight black streaks; faint traces of a subterminal line; cilia black and grey. Hind wing pale brown; the cilia white except at base; the underside white

irrorated with brown, with dark discoidal point, crenulate postmedial line, and diffused black apical patch.

Hab. Victoria, Gisborne, type † ♀ in Coll. Lower. *Exp.* 30 millim.

*4040. **Omphaletis petrodora.** (Plate CXXXI. fig. 19.)

Prometopus petrodora, Lower, Pr. Linn. Soc. N. S. W. xxvi. p. 647 (1902).

♀. Head and thorax white with a slight pale brown tinge; abdomen white slightly tinged with brown on dorsum. Fore wing white irrorated with fuscous; the subbasal line double, waved, from costa to submedian fold; the antemedial line double, oblique, waved, and excurved below cell; traces of a waved medial line; reniform a small black and white lunule with some fuscous at lower angle of cell; traces of a double waved postmedial line incurved to costa, with a series of black points on it on the veins; an indistinct sinuous subterminal line and a terminal series of black points. Hind wing white slightly tinged with fuscous on terminal area; the underside with blackish apical patch.

Hab. S. Australia, Parkside, type † ♀ in Coll. Lower. *Exp.* 36 millim.

4041. **Omphaletis xerampelina.** (Plate CXXXI. fig. 20.)

Prometopus xerampelina, Turner, Tr. R. Soc. S. Austr. xxviii. p. 214 (1904).

♀. Head and thorax fiery red mixed with brown; palpi at sides and vertex of head with some black scales; tegulæ with slight blackish medial line; patagia with some black scales near upper edge; tarsi banded with blackish; abdomen greyish tinged with red and irrorated with fuscous. Fore wing fiery red irrorated with brown and some black scales; subbasal line represented by slight double black striæ from costa and cell; antemedial line indistinctly double, slightly waved, oblique; claviform absent; orbicular and reniform rather small, very indistinctly defined by blackish, the former round, the latter only defined on inner side; traces of a waved medial line; postmedial line dark defined by red on outer side, slightly bent outwards below costa, then dentate, excurved to vein 4, then incurved, some minute red points beyond it on costa; subterminal line represented by a series of slight red lunules with minute blackish streaks before them below costa and at middle, slightly angled outwards at vein 7 and excurved at middle; a slight waved black terminal line; cilia red mixed with black. Hind wing whitish tinged with brown especially towards termen; cilia white tinged with red and with slight brown line through them; the underside white, the costal area and apical half of terminal area irrorated with brown.

Hab. W. Australia, Coolgardie, type † ♀ in Coll. Turner; S. Australia, Willochra (*Lower*), 1 ♀. *Exp.* 36 millim.

*4042. **Omphaletis plinthina.** (Plate CXXXI. fig. 21.)

Caradrina plinthina, Turner, ined.

♀. Head and thorax bright rufous slightly mixed with black; tarsi banded with black; abdomen ochreous brown. Fore wing bright fiery rufous irrorated with black; a waved black subbasal line from costa to submedian fold; a strong waved black antemedial line; orbicular and reniform slightly defined by black, the former round; an indistinct waved medial shade; postmedial line minutely dentate, bent outwards below costa, excurved to vein 4, then incurved; an indistinct diffused somewhat dentate subterminal line; a terminal series of small black lunules. Hind wing ochreous white tinged with brown; the underside with the apical area suffused with brown.

Hab. W. Australia, Roebourne, type † ♀ in Coll. Turner. *Exp.* 36 millim.

B. Frons with pointed process in middle of prominence; hind wing with vein 5 from below middle of discocellulars.

4043. **Omphaletis ethiopica**, n. sp.

♀. Head and thorax red-brown mixed with ochreous and some fuscous; palpi whitish, blackish towards tips; fore and mid tibiæ banded with blackish, the tarsi blackish ringed with white; abdomen ochreous mixed with brown, the ventral surface whitish.

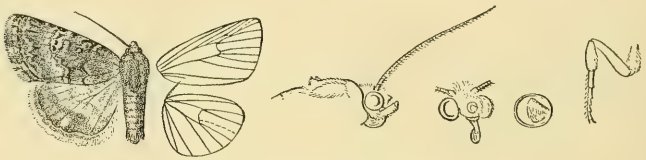


Fig. 101.—*Omphaletis ethiopica*, ♂. ¾.

Fore wing red-brown suffused in parts with bright rufous and slightly irrorated with black; subbasal line represented by a slight black striga from costa; antemedial line black, waved, slightly oblique, a slight black streak from it to postmedial line in submedian fold; orbicular small, round, defined by black; reniform defined on inner side by a black bar, faintly defined on outer; postmedial black defined by whitish on outer side, bent outwards below costa, then minutely dentate, incurved below vein 4, some whitish points beyond it on costa; subterminal line whitish defined on inner side by slight dentate black marks angled outwards at veins 7, 6, 4, 3; a terminal series of black striæ; cilia brownish white mixed with fuscous and with dark line at middle. Hind wing ochreous suffused and irrorated with brown especially on terminal area; an indistinct curved postmedial line, diffused subterminal band, and fine black terminal line; cilia blackish at base, white at tips; the underside ochreous white irrorated with brown,

a curved postmedial line with minute black streaks on the veins and indistinct diffused subterminal band.

Hab. Br. E. Africa, Simba Camp (*Crawshay*), 1 ♂ type. *Exp.* 24 millim.

Genus **ARIATHISA**.

	Type.
Ariathisa, Wlk. xxxiii. 747 (1865)	*excisa*.
Nitocris, Guen. Ent. Mo. Mag. v. p. 4 (1868)	*comma*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and broadly scaled, the 3rd short; frons smooth; eyes large, round; thorax clothed chiefly with scales, the prothorax without crests, the metathorax with small paired crests; tibiæ fringed with long hair, abdomen with some rough hair at base and lateral fringes of hair but without crests. Fore wing with the apex rounded, the termen evenly curved and slightly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male bipectinate with short branches, the apex simple.

A. Fore wing without dark patch below lower angle of cell..... *ochroleuca*.
B. Fore wing with dark patch beyond lower angle of cell ..... *pelosticta*.

*4044. Ariathisa ochroleuca.

Caradrina ochroleuca, Lower, Tr. R. Soc. S. Austr. xxvi. p. 223 (1902).

♂. Head and thorax white tinged with pale rufous; pectus, legs, and abdomen white, the last dorsally slightly tinged with brown. Fore wing white tinged with pale rufous; very indistinct

Fig. 102.—*Ariathisa ochroleuca*, ♂. ½.

waved, rufous, subbasal, antemedial, and medial lines; an indistinct discoidal spot; the postmedial line rather more distinct, dentate, bent outwards below costa, excurved to vein 3, then incurved; an indistinct sinuous subterminal line. Hind wing pure white.

Hab. W. Australia, Fraser's Range, type † ♂ in Coll. Lower. *Exp.* 40 millim.

*4045. Ariathisa pelosticta. (Plate CXXXI. fig. 22.)

Caradrina pelosticta, Lower, Tr. R. Soc. S. Austr. xxvi. p. 224 (1902).

Head and thorax ochreous white mixed with rufous; pectus, legs, and abdomen white, the latter dorsally slightly tinged with

brown. Fore wing ochreous white irrorated with rufous; the median nervure streaked with fuscous expanding into a spot at lower angle of cell and diffused patch just beyond the angle; the costa suffused with fuscous towards apex and with four white points; a subterminal brown shade arising from termen below apex; cilia dark brown mixed with grey. Hind wing pure white.

Hab. Queensland, Brisbane, ♂ in Coll. Turner; N. S. Wales, Broken Hill, type † ♀ in Coll. Lower. *Exp.* 28 millim.

Sect. II. Antennæ of male serrate and fasciculate.

A. Fore wing with the reniform open above and below and forming a rather K-shaped mark.
  a. Fore wing ochreous suffused with brown ..... *endesma.*
  b. Fore wing grey tinged with brown and irrorated with black ..... *cornuta.*
B. Fore wing with the reniform not open above.
  a. Fore wing with the orbicular present.
    a^1. Fore wing with quadrate black spot in cell between orbicular and reniform ..... *euchroa.*
    b^1. Fore wing without quadrate black spot in cell between orbicular and reniform ..... *angasi.*
  b. Fore wing with the orbicular absent ..... *amathodes.*

4046. **Ariathisa endesma.** (Plate CXXXI. fig. 23.)

Prometopus endesma, Lower, Pr. Linn. Soc. N. S. W. xxvi. p. 648 (1902).

♂, Head and thorax reddish yellow mixed with some brown; palpi with brown patch at side of 2nd joint and whitish tips; lower part of frons white; tegulæ with the terminal half white, the patagia mostly white; pectus pale yellowish; legs tinged with brown; abdomen ochreous white. Fore wing straw-yellow, the interspaces suffused with golden brown to subterminal line, a diffused white fascia below costa and the veins white; subbasal line indistinctly double, waved, from costa to submedian fold, a fine black streak from its lower extremity to antemedial line, which is double filled in with whitish, angled outwards below costa and in submedian fold and very strongly above inner margin, angled inwards on the veins; orbicular minute, round, yellowish defined by black; reniform a K-shaped white mark defined by black, its lower extremity slightly angled inwards; postmedial line fine, black defined by yellowish white on outer side, strongly bent outwards below costa, then strongly dentate and oblique; subterminal line oblique defined by black-brown wedge-shaped marks on inner side; a black-brown terminal line; cilia with series of small brown spots near base. Hind wing white very faintly tinged with brown; a slight discoidal lunule; the underside slightly irrorated with brown, a small black discoidal spot and postmedial series of faint brown points on the veins.

Hab. S. Australia, Parkside (*Lower*), 1 ♂. *Exp.* 36 millim. Type † in Coll. Lower.

*4047. Ariathisa cornuta. (Plate CXXXI. fig. 24.)

Prometopus cornuta, Lower, Pr. Linn. Soc. N. S. W. xxvi. p. 646 (1902).

♀. Head and thorax brownish grey mixed with black; palpi black except at extremity; tarsi black ringed with white; abdomen white irrorated with black. Fore wing grey suffused in parts with brown and strongly irrorated with black; subbasal line black defined by white on outer side, waved, from costa to submedian fold, antemedial line double, waved, filled in with whitish, a black and white point before it on vein 1; orbicular a black-edged white point with some black suffusion between it and reniform, which is small, white, quadrate with its two upper angles produced upwards, its lower inner angle inwards and its outer angle more strongly outwards, a waved line from it to inner margin; postmedial line minutely dentate, bent outwards below costa, excurved to vein 3, then incurved, some dark suffusion between it and the sinuous subterminal line; the veins of terminal area with slight dark streaks. Hind wing white tinged with brown especially on the veins and towards apex; the underside with discoidal point and blackish apical patch.

Hab. S. Australia, Parkside, type † ♀ in Coll. Lower. *Exp.* 32 millim.

*4048. Ariathisa euchroa. (Plate CXXXI. fig. 25.)

Caradrina euchroa, Lower, Pr. Linn. Soc. N. S. W. xxvi. p. 653 (1902).

♂. Head and thorax grey and pale rufous; palpi and frons at sides, base of tegulæ, and extremities of patagia black; tarsi black ringed with white; abdomen whitish. Fore wing whitish irrorated with brown and suffused in parts with rufous; a black streak below basal part of cell; the subbasal line represented by a black spot on costa with some white beyond it; the antemedial line waved, whitish defined by some black scales on each side and two points on costa; orbicular and reniform whitish, small, the latter with a black lunule on it, and with a quadrate black spot in cell between them; the postmedial line waved, whitish defined by a dark line on inner side, bent outwards below costa, slightly angled inwards in discal fold and incurved below vein 3, its outer edge defined by a blackish band extending to the sinuous subterminal line; some pale points on costa towards apex, the veins of terminal area with slight dark streaks and a series of black points on termen. Hind wing white slightly tinged with brown especially towards termen; the underside with discoidal spot and curved postmedial line.

Hab. S. Australia, Parkside, type † ♂ in Coll. Lower. *Exp.* 30 millim.

4049. Ariathisa angasi.

Luperina angasi, Feld. Reis. Nov. pl. 109. f. 26 (1874).
Caradrina crypsicharis, Lower, Pr. Linn. Soc. N. S. W. xxvi. p. 654 (1902).

Head and thorax ochreous suffused with red-brown; frons whitish below and with brown bar above; abdomen ochreous white. Fore wing yellowish suffused with golden brown and irrorated with white, the terminal area paler; subbasal line indistinct, double at costa, waved, from costa to submedian fold; antemedial line indistinct, brown, waved, oblique; orbicular minute, round, faintly defined by blackish; reniform a rather quadrate yellowish spot at upper angle of cell defined by red-brown suffusion; postmedial line represented by a series of slight black points with

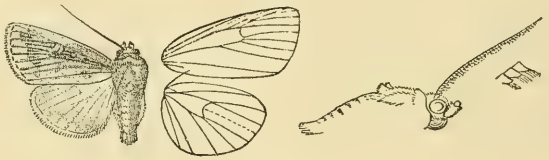


Fig. 103.—*Ariathisa angasi*, ♂. ½.

more distinct spot at costa, bent outwards below costa, then oblique, some yellowish points beyond it on costa; subterminal line defined by red-brown suffusion on its inner side and with slight black streaks before it below veins 7 and 6, slightly angled outwards at vein 7, then oblique; a terminal series of small black lunules. Hind wing white tinged with brownish ochreous; a faint diffused subterminal band; the underside with small dark discoidal spot and traces of postmedial series of points on the veins.

Ab. 1. Head, thorax, and fore wing much paler, the last with the markings obsolescent.

Hab. S. Australia, Parkside (*Lower*), 4 ♂, 1 ♀. *Exp.* 32–36 millim. Type † *crypsicharis* in Coll. Lower.

4050. Ariathisa amathodes. (Plate CXXXI. fig. 26.)

Caradrina amathodes, Turner, Tr. R. Soc. S. Austr. xxxii. p. 59 (1908).

♂. Head and thorax rufous mixed with ochreous; palpi black except at extremity; tarsi banded with black; abdomen brownish ochreous with slight dark irroration. Fore wing ochreous suffused with rufous especially towards subterminal line; the subbasal line represented by black points on costa and median nervure, the antemedial line by points on costa, median nervure, and vein 1; claviform and orbicular obsolete; reniform represented by a small black lunule with ochreous points round it; postmedial line represented by a series of black points, bent outwards below costa, excurved to vein 4, then incurved; subterminal line defined by the area beyond it being pale and by slight black streaks before it at

middle, angled outwards at vein 7 and excurved at middle; a terminal series of black points. Hind wing ochreous greyish, the terminal area suffused with fuscous; the underside paler, a small black discoidal lunule, a postmedial curved series of short black streaks on the veins, the apical half of terminal area suffused with black.

Hab. Victoria, Blackrock (*Lyell*), type † ♂ in Coll. Turner. *Exp.* 32 millim.

Sect. III. Antennæ of male ciliated.

A. (*Ariathisa*). Abdomen of male with lateral tufts of long hair from base; fore wing with large patch of androconia in cell; hind wing with slight streak of androconia below end of cell on underside.

4051. Ariathisa excisa.

Spodoptera excisa, Herr.-Schäff. Aussereur. Schmett. f. 129 (1850).
Ariathisa atrosignata, Wlk. xxxiii. 747 (1865).

Head and thorax pale grey, the head slightly tinged with rufous; palpi black, pure white in front and at tips; lower part of frons white; antennæ blackish, the basal joint white; tegulæ with black-brown band at base; patagia with a few brown scales; meso- and metathorax with paired brown points; pectus white; tibiæ brown, the tarsi black ringed with white; abdomen whitish dorsally tinged with brown, the lateral tufts of male fulvous yellow. Fore wing whitish suffused with pale rufous, except on medial area, and slightly irrorated with brown; subbasal line double filled in with white, the inner line black, slightly excurved below costa and ending at

Fig. 104.—*Ariathisa excisa*, ♂. ½.

submedian fold; antemedial line indistinct, double filled in with white, oblique, waved, with black bar on the outer line at costa; orbicular and reniform black, their lower parts conjoined by a black fascia so as to form a U-shaped mark, the former oblique elliptical; a broad pale rufous medial shade; postmedial line double filled in with white, bent outwards below costa, then minutely waved, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line indistinct, pale, defined on inner side by small dentate dark marks, minutely waved, slightly angled outwards at vein 7 and excurved at middle; a whitish apical patch; a terminal series of small black lunules; cilia brown at base, whitish at tips. Hind wing white, the costal area suffused with reddish brown, the veins and termen from apex to vein 2 tinged with

brown; cilia white, yellowish at base and with brown line near base from apex to vein 2. Underside of fore wing with the patch of androconia in cell white, yellow at extremity; hind wing with the costa tinged with yellow towards base, the streak of scales below end of cell of male brown, a brown postmedial bar from costa to vein 6, some brown irroration at apex and some slight black points on apical part of termen.

Hab. Br. E. Africa, Kikuyu (*Crawshay*), 1 ♂; Natal (*Gueinzius, Leigh*), 2 ♂, 1 ♀ type: C. Colony, Transkei (*Miss F. Barrett*), 2 ♀. *Exp.* 34–36 millim.

B. Abdomen of male without lateral tufts of hair; fore wing with small patch of androconia in cell on underside; hind wing without streak of androconia below cell.

4052. Ariathisa semiluna.

Nitocris semiluna, Hmpsn. Trans. Zool. Soc. xix. ined. pl. iv. f. 13.

Head and thorax red-brown mixed with purplish grey; palpi black-brown, white at tips; tegulæ with black-brown band at base; tarsi black ringed with white; abdomen red-brown. Fore wing purplish grey suffused and irrorated with red-brown; subbasal line black, waved, from costa to submedian fold; antemedial line black, bent inwards to costa, then sinuous, excurved above inner margin; orbicular and reniform black-brown slightly defined by whitish, their lower extremities connected by a fascia, forming a **U**-shaped mark; traces of a dark medial shade; postmedial line slight, black,

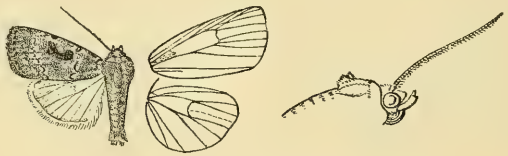


Fig. 105.—*Ariathisa semiluna*, ♂. ½.

interrupted, with small black spot at costa, oblique from costa to vein 6, then dentate, incurved below vein 4; subterminal line indistinct, pale, defined on inner side by slight dentate dark marks from below costa to vein 4, angled outwards at vein 7 and excurved at middle; a terminal series of minute black lunules. Hind wing greyish tinged with ochreous, the termen rather darker from apex to submedian fold; cilia ochreous white. Underside of fore wing of male with the patch of androconia in cell ochreous; hind wing whitish, the costal area irrorated with brown, a blackish discoidal lunule, rather diffused indistinct postmedial line from costa to vein 3, and terminal series of small black lunules.

Hab. Br. E. Africa, Ndimu (*Betton*), 1 ♀, Uganda Ry., Mile 478 (*Betton*), 1 ♀, E. Quaso (*Betton*), 1 ♂, 1 ♀; Uganda, Ruwenzori, 6000' (*Wollaston*), 1 ♂ type. *Exp.* 32–36 millim.

C. Male without secondary sexual characters.
a. Fore wing with strong black fascia below base of cell and wedge-shaped patch in and beyond cell.
a^1. Fore wing red-brown suffused with purple, the costal area whitish; reniform white ..... *tortisigna.*
b^1. Fore wing grey irrorated with black, the terminal area pale rufous; reniform yellowish ..... *chrysospila.*
c^1. Fore wing white, the terminal area tinged with brown ..... *paragypsa.*
b. Fore wing without strong black fascia below base of cell and wedge-shaped patch in and beyond cell.
a^1. Fore wing with the ground-colour white.
a^2. Fore wing pure white, not tinged with brown ... *gypsina.*
b^2. Fore wing white tinged with brown ..... *paratorna.*
b^1. Fore wing with the ground-colour not white.
a^2. Fore wing with the terminal area white with brownish streaks on the veins ..... *chionopasta.*
b^2. Fore wing with the terminal area bluish white.
a^3. Fore wing pale rufous except terminal area; hind wing tinged with brown ..... *cyanoloma.*
b^3. Fore wing pale ochreous brown except terminal area; hind wing pure white ..... *callimera.*
c^2. Fore wing with the terminal area not white.
a^3. Fore wing with fine black streak in base of submedian fold.
a^4. Fore wing with the lower extremity of reniform produced to a long acute point.
a^5. Tegulæ whitish and strongly contrasting... *etoniana.*
b^5. Tegulæ concolorous ..... *hydræcioides.*
b^4. Fore wing with the lower extremity of reniform rounded and much less produced.
a^5. Fore wing brown suffused with fuscous, the terminal area pale ochreous ..... *marginalis.*
b^5. Fore wing grey suffused with fuscous, the terminal area slightly paler ..... *microspila.*
c^5. Fore wing red-brown, the terminal area concolorous.
a^6. Fore wing with black streak beyond the reniform ..... *atmoscopa.*
b^6. Fore wing without black streak beyond the reniform ..... *confinis.*
b^3. Fore wing without black streak in base of submedian fold.
a^4. Fore wing with the inner and terminal areas violaceous grey and strongly contrasting ... *poliocrossa.*
b^4. Fore wing with the inner and terminal areas concolorous.
a^5. Fore wing purplish red-brown ..... *porphyrescens.*
b^5. Fore wing not purplish red-brown.
a^6. Fore wing with whitish or pale lunule or point on outer edge of reniform.
a^7. Fore wing with the lower extremity of reniform produced to a point.
a^8. Fore wing ferruginous brown mixed with white ..... *bistrigula.*
b^8. Fore wing grey irrorated with dark brown ..... *capularis.*
c^8. Fore wing grey-brown in male blackish in female, without dark irroration ..... *comma.*

b^7. Fore wing with the lower extremity of reniform not produced to a point.
a^8. Fore wing black-brown with a greyish gloss ..... *atra.*
b^8. Fore wing fuscous irrorated with grey ..... *microdes*
c^8. Fore wing grey with dark irroration.
a^9. Fore wing with short black streaks before middle of subterminal line ..... *atrisquamata.*
b^9. Fore wing without black streaks before middle of subterminal line ..... *cryphæa.*
d^8. Fore wing pale rufous slightly irrorated with grey.
a^9. Tegulæ black at base ..... *heterogama.*
b^9. Tegulæ not black at base ..... *monochroa.*
b^6. Fore wing with small white spot in centre of reniform.
a^7. Fore wing without terminal series of small white spots ..... *adelphodes.*
b^7. Fore wing with terminal series of small white spots ..... *leucosticta.*
c^6. Fore wing with the reniform a black lunule produced at lower extremity.
a^7. Fore wing grey tinged with rufous ... *interferens.*
b^7. Fore wing grey suffused with fuscous. *flexirena.*
d^6. Fore wing with the reniform slight, dark.
a^7. Fore wing fuscous grey irrorated with black ..... *adelopa.*
b^7. Fore wing tinged with brown.
a^8. Fore wing with the orbicular a whitish point defined by fuscous.
a^9. Fore wing with the postmedial line not incurved at discal fold. *nycteris.*
b^9. Fore wing with the postmedial line incurved at discal fold ..... *basisticha.*
b^8. Fore wing with the orbicular ill-defined, dark.
a^9. Fore wing ochreous tinged with red-brown ..... *striolata.*
b^9. Fore wing greyish ochreous ..... *acallis.*
c^8. Fore wing with the orbicular absent *melanographa.*

4053. Ariathisa tortisigna. (Plate CXXXI. fig. 27.)

Ochropleura tortisigna, Wlk. x. 409 (1856).
Nitocris epiplecta, Guen. Ent. Mo. Mag. v. p. 6 (1868).
Agrotis costalis, Wlk. Char. Lep. Het. p. 69 (1869).
Agrotis antipoda, Feld. Reis. Nov. pl. 110. f. 21 (1874).

Head and thorax red-brown; palpi whitish with blackish patch at sides; frons whitish below, blackish above; tegulæ reddish yellow at tips; metathorax with blackish patch; pectus and legs whitish tinged with brown, the tarsi brown ringed with whitish; abdomen whitish dorsally suffused with red-brown, ventrally irrorated with brown. Fore wing red-brown suffused with purplish to

subterminal line, the costal area white irrorated with brown to postmedial line; a strong black streak below basal half of cell; antemedial line obsolete to submedian fold, then indistinct, pale, angled inwards on vein 1; a wedge-shaped black patch in terminal half of cell with the small round white orbicular on it; reniform white with brown line in middle, narrow above and expanding below into a brown patch, its lower extremity produced, some black streaks beyond it; postmedial line indistinctly double filled in with whitish, bent outwards below costa, then oblique, minutely dentate, some pale points beyond it on costa; subterminal line indistinct defined on inner side by a purplish patch on costal area and black streaks between veins 7 and 3, slightly angled outwards at vein 7, then oblique; the terminal area with slight dark streaks on the veins; cilia grey-brown with punctiform ochreous line at base. Hind wing whitish suffused with yellow-brown except at base; cilia white, brown at apex and with brown line near base; the underside white irrorated with brown, a blackish discoidal lunule, postmedial series of points on the veins, and apical patch extending to vein 6.

Hab. Queensland, Brisbane (*Turner*), 1 ♀; N. S. Wales (*J. J. Walker*), 1 ♀; Victoria, Wardin (*Lyell*), 1 ♂, Gisborne (*Lyell*), 1 ♀; Tasmania (*Allport*), 1 ♂ type. *Exp.* 34–38 millim. Type *costalis* in Mus. Melbourne, examined by Dr. Turner.

*4054. Ariathisa chrysospila. (Plate CXXXI. fig. 28.)

Caradrina chrysospila, Lower, Pr. Linn. Soc. N. S. W. xxvi. p. 650 (1902).

♀. Head ochreous with some black on vertex and sides of palpi; thorax grey irrorated with black, the tegulæ in front and patagia above black; pectus, legs, and abdomen whitish irrorated with brown. Fore wing grey strongly irrorated with black; a black streak below basal half of cell; a wedge-shaped black patch from middle of cell, diffused beyond the cell to costa and vein 2 and terminated by the sinuous subterminal line, the colour beyond which is pale rufous; the antemedial and postmedial lines obsolete; orbicular represented by an ochreous point, the reniform by a small yellowish lunule; some pale points on terminal part of costa and a terminal series of black points; cilia brown and black. Hind wing pale brown; the cilia whitish at tips; the underside whitish with discoidal lunule, diffused postmedial line, and apical patch.

Ab. 1. Fore wing with the orbicular and reniform white.—Victoria.

Hab. Victoria, Birchip; S. Australia, Parkside, type † ♀ in Coll. Lower. *Exp.* 28 millim.

4055. Ariathisa paragypsa. (Plate CXXXI. fig. 29.)

Caradrina paragypsa, Lower, Pr. Linn. Soc. N. S. W. xxvi. p. 650 (1902).

♂. Head and thorax white; palpi with black marks at side of 1st and 2nd joints; frons with black bar above; tegulæ with the basal half red-brown; patagia with black upper edge expanding into patches at base; tibiæ and tarsi banded black and white; abdomen white tinged with ochreous brown. Fore wing white with a faint violaceous tinge; a black point at base of costa; a strong black streak below basal half of cell with some reddish brown below it; a slight red-brown subbasal mark on vein 1; a very slight arched brown streak above medial part of vein 1; antemedial line represented by a minute dark point on costa; a wedge-shaped black patch in terminal half of cell with the small rather triangular white orbicular on it; reniform a narrow white lunule defined by black and with slight brown line in centre, its lower part filled in with red-brown and angled inwards on median nervure to below orbicular, its lower extremity much produced and with grey-brown suffusion beyond it to subterminal line: postmedial line slight, blackish, bent outwards below costa, then oblique, dentate; subterminal line slight, whitish, defined on inner side by wedge-shaped black streaks from below costa to vein 3, slightly excurved at vein 7, then oblique; the terminal area suffused with rufous except towards tornus and with slight dark streaks on the veins; a terminal series of slight brown striæ; cilia brown with whitish marks at base. Hind wing whitish, uniformly tinged with red-brown; cilia white, brown at apex, and with series of brown spots to vein 2; the underside white, the costal and terminal areas irrorated with brown, the inner area tinged with brown, a discoidal point, postmedial series of minute streaks on the veins and apical black patch extending to vein 6.

Hab. S. Australia, Parkside (*Lower*), 1 ♂. *Exp.* 36 millim. Type † in Coll. Lower.

4056. Ariathisa gypsina. (Plate CXXXI. fig. 30.)

Agrotis gypsina, Lower, Tr. R. Soc. S. Austr. xxi. p. 52 (1897).

♂. Pure white; palpi with black-brown mark at side of 2nd joint; tarsi black-brown ringed with white; abdomen faintly tinged with brown. Fore wing with waved black subbasal line from costa to submedian fold, stronger at costa; antemedial line represented by black points on costa, median nervure, and vein 1; orbicular faintly indicated by a few black scales; reniform represented by a small yellow lunule defined by brown, with brown-defined spot on its inner side and greyish spot below it; a medial brownish point on costa; postmedial line represented by a small black spot on costa, then by a series of black points on the veins, bent outwards below costa, excurved to vein 4, then oblique, and the point on vein 1 displaced outwards; a terminal series of black

points. Hind wing semihyaline white; the underside with small discoidal lunule and blackish apical patch.

Ab. 1. Fore wing with the subbasal line and reniform almost obsolete.—W. Australia.

Hab. W. Australia, Perth (*Worsfold*), 1 ♂; S. Australia, Exeter (*Lower*), 1 ♂. *Exp.* 38 millim. Type † in Coll. Lower.

4057. Ariathisa paratorna. (Plate CXXXI. fig. 31.)

Caradrina paratorna, Lower, Pr. Linn. Soc. N. S. W. xxvi. p. 655 (1902).

♂. Head and thorax white slightly tinged with brown; palpi with black patches at sides of 1st and 2nd joints; tarsi black ringed with white; abdomen white tinged with reddish brown and irrorated with fuscous. Fore wing grey-white irrorated with brown and a few black scales; subbasal line represented by a blackish point on costa; faint traces of an oblique sinuous antemedial line with blackish points on costa and inner margin; orbicular a slight blackish point, the reniform a narrow blackish lunule slightly defined by white on outer side; postmedial line indistinct, whitish, with series of black points on the veins and more distinct spot at costa, bent outwards below costa, then minutely waved, oblique below vein 4; the postmedial area somewhat browner; subterminal line indistinct, whitish, defined on inner side by some blackish scales, very slightly excurved below vein 7 and at middle; a terminal series of slight black striæ; cilia grey mixed with blackish. Hind wing white tinged with brown, especially on the veins and termen; the apical area fuscous; cilia white, brown at apex, and with slight brownish line near base; the underside whiter, the costal and terminal areas slightly irrorated with fuscous, a discoidal point, postmedial series of short streaks on the veins, and apical black patch extending to vein 6 and with some fuscous suffusion below it.

Hab. S. Australia, Parkside (*Lower*), 1 ♂, Blackwood (*Lower*), 1 ♂. *Exp.* 36 millim. Type † in Coll. Lower.

4058. Ariathisa chionopasta, n. sp. (Plate CXXXI. fig. 32.)

♂. Head and thorax white tinged with pale red; palpi with brown spots at sides of 1st and 2nd joints; abdomen white faintly tinged with reddish. Fore wing white suffused with pale red, except on costal area and inner margin to subterminal line, the veins slightly streaked with white to postmedial line; antemedial line represented by slight brown points on costa, median nervure and vein 1; orbicular a white point defined by brown; reniform white slightly defined by brown, narrow above, constricted at middle, angled inwards on median nervure, and its lower extremity produced to three points; postmedial line represented by a series of black points on the veins with traces of a dentate white line between them, oblique below vein 4; subterminal line brownish,

defined on inner side at middle by slight brown streaks on the veins, excurved below vein 7 and at middle; the terminal area with faint brown streaks on the veins; a terminal series of black striæ; cilia white slightly tinged with red. Hind wing pure white; the underside with small fuscous discoidal spot.

Hab. W. Australia, Perth (*Worsfield*), 2 ♂ type. *Exp.* 32–40 millim.

*4059. Ariathisa cyanoloma. (Plate CXXXII. fig. 1.)

Prometopus cyanoloma, Lower, Pr. Linn. Soc. N.S.W. xxvi. p. 647 (1902).

♂. Head and thorax very pale rufous; palpi with black patch at sides; tarsi black with white rings; abdomen white, slightly tinged on dorsum with brown. Fore wing very pale rufous with slight dark irroration: the orbicular represented by a black and white point; the reniform by a black and white point at upper angle of cell and a black spot at lower, the postmedial line by a series of black and white points on the veins; the sinuous subterminal line defined by small dentate black marks on the veins before its medial part, the area beyond it blue-white; a terminal series of black points; cilia pale rufous. Hind wing whitish tinged with brown especially towards termen; a black discoidal spot; cilia white. Underside whitish; fore wing with some fuscous suffusion in cell; both wings with black discoidal point and apical patch.

Hab. Victoria, Melbourne, type † ♂ in Coll. Lower. *Exp.* 36 millim.

4060. Ariathisa callimera. (Plate CXXXII. fig. 2.)

Agrotis callimera, Lower, Tr. R. Soc. S. Austr. xxi. p. 51 (1897).

♂. Head and thorax whitish suffused with fawn-brown, the head whiter; palpi white with black marks at sides of 1st and 2nd joints; sides of frons with black marks; pectus and legs whitish tinged with brown, the fore tibiæ with two brown points, the tarsi fuscous brown ringed with white; abdomen whitish tinged with ochreous brown. Fore wing fawn-brown, the terminal area bluish white irrorated with brown; subbasal line represented by white points on costa and subcostal nervure, with a white point beyond it in cell; antemedial line represented by white points on costa, subcostal and median nervures, and vein 1; orbicular represented by a white point; the reniform defined by white and with a small white lunule on its outer edge, narrow above and expanding below; postmedial line represented by a series of blackish points on the veins with white points on their outer side, bent outwards below costa and oblique below vein 4, some white points beyond it on costa; subterminal line defined by red-brown suffusion on inner side, and with slight brown streaks before it on the veins,

slightly excurved below vein 4 and at middle ; a terminal series of black striæ ; cilia rufous at base, whitish at tips. Hind wing pure white ; the underside with the costal area irrorated with brown, a blackish discoidal lunule.

Hab. S. Australia, Exeter (*Lower*), 1 ♂. *Exp.* 40 millim. Type † in Coll. Lower.

4061. Ariathisa etoniana. (Plate CXXXII. fig. 3.)

Caradrina etoniana, Lower, Pr. Linn. Soc. N. S. W. xxvi. p. 649 (1902).

Head and thorax black; palpi below and lower part of frons ochreous white ; tegulæ drab ; pectus and legs black and white ; abdomen ochreous white dorsally suffused with fuscous, ventrally irrorated with fuscous. Fore wing reddish brown suffused with black, except the inner and terminal areas ; an indistinct double waved subbasal line from costa to submedian fold in which there is a fine black streak beyond it ; a double waved antemedial line acutely dentate outwards in submedian fold and excurved to inner margin, some grey suffusion beyond it on inner area ; claviform obsolete ; orbicular represented by an ochreous point ; reniform 2-shaped, rufous above, ochreous and attenuate below, and angled inwards on median nervure ; some white points on apical part of costa ; postmedial line dentate, bent outwards below costa, angled inwards in submedian fold, and with some grey scales on its outer edge ; an irregularly dentate black subterminal line ; cilia black. Hind wing semihyaline white ; the apical area suffused with fuscous, the inner margin tinged with brown. Underside of fore wing with the costa white to just beyond the postmedial line ; hind wing with the discoidal point, postmedial series on the veins, and black apical patch.

Hab. N. S. Wales (*J. J. Walker*), 2 ♀ ; S. Australia, Parkside, type † ♂ in Coll. Lower. *Exp.* 36 millim.

4062. Ariathisa hydræcioides. (Plate CXXXII. fig. 4.)

Agrotis hydræcioides. Guen. Noct. i. p. 272 (1852).
Celæna imparata, Wlk. x. 268 (1856).

Head and thorax reddish brown mixed with grey ; palpi whitish with black patches at sides of 1st and 2nd joints ; tegulæ with blackish medial line ; patagia edged with blackish ; pectus whitish mixed with brown, the tarsi blackish with pale rings ; abdomen whitish tinged with red-brown. Fore wing reddish brown with slight dark irroration ; subbasal line double, blackish, from costa to submedian fold in which there is a fine black streak from it to just beyond antemedial line, which is double, waved, oblique ; orbicular small, round, white defined by black ; reniform a narrow white lunule with some blackish suffusion before it in cell and brown line in middle expanding into a patch on its lower part which is angled inwards on median nervure to below orbicular,

its lower extremity produced; postmedial line indistinctly double, strongly bent outwards below costa, then dentate, oblique below vein 4 and angled inwards in submedian fold, some pale points beyond it on costa; postmedial area fuscous from costa to vein 4, defining the subterminal line, which is indistinct, pale, slightly angled outwards at vein 7, then oblique; a terminal series of minute black points; cilia mixed with fuscous and with fine grey line at base. Hind wing white tinged with brown, especially on terminal area; cilia white, brown at apex and with brownish points near base to vein 2; the underside white irrorated with brown, a black discoidal lunule and blackish apical patch extending to vein 6.

Hab. Victoria, Melbourne (*Lucas*), 1 ♀, Gisborne (*Lyell*), 1 ♂. 1 ♀, Birchip, 1 ♀; S. Australia, Parkside (*Lower*), 1 ♂, Adelaide (*Wilson*), 1 ♀; Tasmania (*Hardwicke*, *Smith*), 1 ♂, 1 ♀. *Exp.* 34–36 millim. Type† in Mus. Paris, type† *imparata* in Mus. Oxon.

4063. Ariathisa marginalis. (Plate CXXXII. fig. 5.)

Hadena marginalis, Wlk. xxxiii. 741 (1865).
Nitocris limbosa, Guen. Ent. Mo. Mag. v. p. 5 (1868).

Head and thorax brown mixed with fuscous and whitish; palpi with blackish patch at side of 2nd joint; frons with black band above; tegulæ with the tips somewhat paler; pectus whitish; tarsi fuscous ringed with white; abdomen whitish, dorsally suffused with brown, ventrally irrorated with black. Fore wing brownish suffused with fuscous to the subterminal line, the terminal area ochreous white tinged with reddish brown; subbasal line represented by double black striæ from costa and cell filled in with brown, and with fine black streak beyond it in submedian fold; antemedial line double filled in with brown, oblique, slightly waved; orbicular an ochreous white point defined by black; reniform ochreous, with blackish line in centre expanding into a patch below, its lower extremity produced; an indistinct sinuous black medial line; postmedial line double filled in with brown, bent outwards below costa, then very minutely waved, oblique and angled inwards at submedian fold; subterminal line indistinct, pale, defined on inner side by small dentate black marks, angled outwards at vein 7 and somewhat dentate at veins 4, 3; a terminal series of black striæ; cilia ochreous at base, fuscous at tips. Hind wing greyish suffused with fuscous brown; cilia white, fuscous at tips and with fuscous line through them; the underside white irrorated with black, a black discoidal lunule, postmedial series of short streaks on the veins, and blackish apical patch extending to vein 6.

Hab. Tasmania, Hobart (*Norman*), 1 ♂, 1 ♀ type. *Exp.* 36 millim.

4064. Ariathisa microspila. (Plate CXXXII. fig. 6.)

Caradrina microspila, Lower, Pr. Linn. Soc. N. S. W. xxvi. p. 648 (1902).

♂. Head and thorax fuscous brown mixed with grey; palpi whitish with black patches at sides of 1st and 2nd joints; frons with blackish band above; tegulæ with black medial line; pectus white mixed with some fuscous; tarsi black ringed with white; abdomen whitish dorsally suffused with brown, ventrally irrorated with brown. Fore wing grey suffused with fuscous brown, the terminal area paler and tinged with rufous; subbasal line double, black filled in with grey, minutely waved, from costa to submedian fold in which there is a fine black streak to just beyond antemedial line, which is double filled in with grey, oblique, waved; orbicular a whitish point defined by black; reniform whitish defined by black and with black line in centre expanding into a patch below, its lower extremity produced; a sinuous blackish medial line; postmedial line black defined by grey on outer side, bent outwards below costa, then minutely waved, slightly incurved at discal fold, oblique below vein 4 and angled inwards at submedian fold; subterminal line defined by black suffusion on inner side and with slight black streaks before it at middle, slightly excurved below vein 7 and at middle; a terminal series of black striæ; cilia whitish mixed with fuscous. Hind wing grey tinged with brown, especially on terminal area; cilia white with fuscous line through them from apex to vein 2; the underside white irrorated with brown especially on costal area, a dark apical patch extending to vein 6.

Abdomen of male with lateral tufts of long white hair from base.

Hab. Victoria, Birchip (*Lyell*), 2 ♂; S. Australia, Parkside, type † ♂ in Coll. Lower. *Exp.* 28 millim.

* 4065. Ariathisa atmoscopa. (Plate CXXXII. fig. 7.)

Caradrina atmoscopa, Lower, Tr. R. Soc. S. Austr. xxvi. p. 223 (1902).

Head and thorax fuscous brown; palpi with the 2nd joint and the metathoracic crests tipped with grey; pectus and legs with some white mixed, the tarsi black ringed with white; abdomen brown mixed with some grey. Fore wing fuscous brown mixed with some grey; a slight black streak below base of cell; antemedial line blackish defined on inner side by white, angled outwards below costa, in submedian fold and to inner margin and inwards in cell and on vein 1; orbicular minute, reddish defined by blackish, a blackish streak from it to reniform, which has a reddish bar on inner side followed by a small white lunule with a black streak from it to termen; postmedial line blackish defined on outer side by white, slightly bent outwards below costa, incurved at discal fold and below vein 4, then angled outwards at vein 1 and bent inwards to inner margin at antemedial line, the veins beyond it with black streaks, some white points on costa; subterminal line

whitish, somewhat angled outwards at vein 7 and dentate at middle, bent outwards to tornus; a terminal series of black striæ. Hind wing greyish suffused with fuscous brown; cilia whitish with a brown line near base; the underside grey irrorated with brown especially on costal area.

Hab. N. S. Wales, Broken Hill, type † ♂ in Coll. Lower; Victoria, Melbourne, Birchip. *Exp.* 28 millim.

4066. Ariathisa confinis. (Plate CXXXII. fig. 8.)

Celæna confinis, Wlk. xi. p. 733 (1857).

♂. Head and thorax pale rufous mixed with fuscous; palpi black, ochreous white at tips; tarsi fuscous ringed with ochreous; abdomen ochreous tinged with brown. Fore wing red-brown slightly suffused and irrorated with fuscous; a fine black streak in base of submedian fold; subbasal line represented by a slight fuscous striga from costa; antemedial line blackish, oblique, waved, crossed by a slight black streak in submedian fold; orbicular a white point slightly defined by black; reniform white slightly defined by black and with black line in centre expanding into a patch below, its lower extremity somewhat produced; traces of a diffused sinuous medial line; postmedial line indistinct, double and filled in with ochreous towards costa, slightly bent outwards below costa, then oblique and minutely waved; subterminal line indistinct, slightly defined by fuscous suffusion on inner side, with slight white and black streaks before it at middle, minutely waved; the terminal area with slight black streaks on the veins; a terminal series of black points with some white scales before them. Hind wing grey suffused with reddish brown; cilia brownish at base, white at tips; the underside ochreous white irrorated with red-brown, a small dark discoidal spot, postmedial points on costa and veins 7, 6, and a diffused brown apical patch.

Hab. Queensland, Moreton Bay (*Diggles*), 1 ♂ type; N.S.Wales, Sydney (*Damel*), 1 ♂; S. Australia, Semaphore (*Lower*), 1 ♂. *Exp.* 30 millim.

*4067. Ariathisa poliocrossa. (Plate CXXXII. fig. 9.)

Caradrina poliocrossa, Turner, Tr. Roy. Soc. S. Austr. xxviii. p. 5 (1903).

♂. Head rufous; palpi ochreous in front; tegulæ black, grey irrorated with brown at tips; thorax and abdomen grey-brown. Fore wing violaceous grey suffused with rufous except on inner and terminal areas, the rufous deepening towards subterminal line; the subbasal line represented by double striæ from costa; the antemedial line double, waved, obsolescent on costal half, oblique from costa to submedian fold where it is angled; reniform represented by a small fuscous lunule; median nervure blackish towards extremity; the postmedial line double, waved, obsolescent on costal half, bent outwards below costa, excurved to vein 4, then oblique,

some pale points beyond it on costa; the subterminal line only defined by the grey area beyond it, slightly excurved at vein 7 and middle; a terminal series of black points; cilia rufous. Hind wing grey suffused with brown; the cilia grey; the underside grey irrorated with brown, a black discoidal spot and fuscous apical patch.

Abdomen with exsertible lateral tufts of hair from base above the stigmata.

Hab. W. Australia, Albany, type † ♂ in Mus. Queensland. *Exp.* 30 millim.

*4068. Ariathisa porphyrescens. (Plate CXXXII. fig. 10.)

Caradrina porphyrescens, Lower, Pr. Linn. Soc. N. S. W. xxvi. p. 652 (1902).

♀. Head and thorax purplish red-brown; palpi blackish at sides; thorax irrorated with fuscous; abdomen pale brown, the ventral surface whitish irrorated with brown. Fore wing purplish red-brown slightly irrorated with fuscous; traces of a double antemedial line; orbicular and reniform represented by very indistinct reddish-ochreous points; an obscure medial shade from lower angle of cell to inner margin; an indistinct minutely dentate postmedial line bent outwards below costa; the subterminal line defined by the sinuous black shade on its inner edge; cilia dark brown. Hind wing pale brown, rather darker on terminal area; cilia white at tips; the underside whitish with discoidal point, curved postmedial line, and apical dark patch.

Hab. Victoria, Melbourne, type † ♀ in Coll. Lower. *Exp.* 38 millim.

4069. Ariathisa bistrigula. (Plate CXXXII. fig. 11.)

Hadena bistrigula, Wlk. xi. 599 (1857).

♀. Head and thorax dark brown with a slight purplish tinge mixed with grey; antennæ whitish; tarsi fuscous ringed with whitish; abdomen grey suffused with brown. Fore wing ferruginous brown mixed with white and suffused with purple; subbasal line represented by an oblique white striga from costa; antemedial line indistinct, whitish, oblique, waved; orbicular a whitish point; reniform an ochreous-white lunule defined by blackish on inner side, with whitish striga before its upper part, its lower extremity produced to a point and angled; traces of a sinuous dark medial line; postmedial line indistinct, dark defined by grey-white on outer side, bent outwards below costa, then oblique, dentate and produced to points on the veins; subterminal line grey-white, angled outwards at vein 7, then oblique; a terminal series of black striæ; cilia brown mixed with grey. Hind wing pale red-brown; cilia brownish at base, white at tips; the underside white irrorated with brown, the terminal area suffused with brown and with diffused dark apical patch, a small discoidal spot.

Hab. Australia (*Hardwicke*), 1 ♀ type. *Exp.* 38 millim.

4070. Ariathisa capularis. (Plate CXXXII. fig. 12.)

Agrotis capularis, Guen. Noct. i p. 271 (1852).
Mamestra ignobilis, Wlk. ix. 239 (1856).
Graphiphora instipata, Wlk. x. 404 (1856).
Hadena congregata, Wlk. xi. 598 (1857).
Orthosia lunifera, Wlk. xi. 747 (1857).
Celæna verecunda, Wlk. xv. 1691 (1858).
Amphipyra cinctipes, Feld. Reis. Nov. pl. 111. f. 19 (1874).
Caradrina derosa, Morr. Proc. Bost. Soc. N. H. xviii. p. 121 (1875); Smith, Cat. Noct. N. Am. p. 195.

Head and thorax reddish brown mixed with grey; palpi black at base, whitish at tips; lower part of frons whitish; tegulæ with slight dark medial line; pectus whitish except in front; tarsi black ringed with white; abdomen whitish mixed with brown. Fore wing grey irrorated with dark brown and mixed with white; subbasal line represented by double black striæ from costa and cell filled in with whitish; antemedial line double, black filled in with whitish, oblique, waved; orbicular small, round, white defined by black; reniform a pale reddish lunule defined by black; a sinuous blackish medial line; postmedial line double, black, bent outwards below costa, then minutely dentate, oblique and angled inwards in submedian fold, some pale points beyond it on costa; subterminal line slightly defined by blackish on inner side and with small dentate black marks before it at middle, slightly angled outwards at vein 7 and excurved at middle; a terminal series of black striæ; cilia with blackish line through them. Hind wing grey-brown; cilia white with brown line near base from apex to vein 2; the underside white irrorated with brown, a black discoidal lunule and postmedial series of short streaks on the veins, the area beyond it suffused with brown becoming blackish at apex.

Hab. N. S. Wales (*Raynor*), 1 ♀; Victoria, Gisborne (*Lyell*), 2 ♂, 3 ♀; S. Australia, Adelaide, 1 ♂ type *lunifera*; Tasmania (*Smith*, *Butler*), 3 ♂, 1 ♀, types *ignobilis*, *instipata*, *congregata*, Hobart *Norman*, *Lea*), 3 ♂. *Exp.* 34–42 millim. Type † in Mus. Paris (nd type † *derosa* in Coll. Michigan Agric. Coll.; the locality New aersey is an error.

4071. Ariathisa comma.

Mamestra comma, Wlk. ix. 239 (1856); Butl. Ins. Voy. Erebus & Terror, pl. ix. f. 6; Hudson, N. Zealand Moths & Butterflies, p. 7, pl. v. ff. 27, 28.
Graphiphora implexa, Wlk. x. 405 (1856).
Hadena plusiata, Wlk. xxxiii. 742 (1865).
Nitocris bicomma, Guen. Ent. Mo. Mag. v. p. 4 (1868).

♂. Head and thorax reddish brown mixed with grey; palpi black at base, whitish at tips; tarsi fuscous with pale rings; abdomen grey-brown. Fore wing pale grey-brown; subbasal line double, waved, from costa to submedian fold; antemedial line double, waved, oblique, angled outwards in submedian fold; orbicular a whitish point defined by black; reniform ochreous white defined by black and with blackish line in centre expanding into a patch below, its lower extremity produced; a sinuous medial line

excurved in cell; postmedial line double, slightly bent outwards below costa, then minutely waved, oblique and slightly angled inwards in submedian fold, some whitish points beyond it on costa; subterminal line brown, defined on inner side by somewhat dentate black marks from costa to vein 3, slightly excurved below vein 7 and at middle; cilia tinged with fuscous. Hind wing reddish

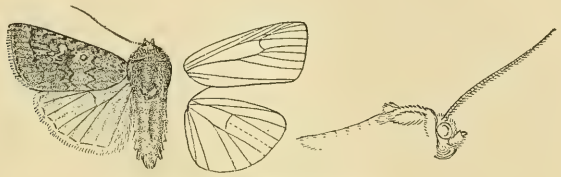


Fig. 106.—*Ariathisa comma*, ♂. ½.

brown; cilia with ochreous line at base followed by a brown line and white tips; the underside white irrorated with brown, the inner and terminal areas tinged with brown, a slight blackish discoidal lunule, oblique postmedial line and, diffused subterminal band expanding into a diffused apical patch.

♀. Head, thorax, and fore wing blackish glossed with grey, the last with the markings less prominent.

Hab. N. Zealand (*Churton*, *Colenso*, *Smith*, *Mathew*, *J. J. Walker*, *Hudson*), 3 ♂, 11 ♀, type and type *implexa*, Dunedin (*Purdie*), 2 ♂, 1 ♀, Marlborough (*Skelton*), 2 ♂, Auckland (*Oxley*), 2 ♂ type *plusiata*, Wellington, Blenheim, Christchurch, Rakaia. *Exp.* 32–40 millim.

Larva. Hudson, New Zealand Moths & Butterflies, p. 7, pl. 3. f. 11.

Dark brown tinged with pink; subdorsal area paler; a series of oblique black streaks on each segment, the thoracic somites darker. Feeds on various low plants. 1.

4072. **Ariathisa atra.** (Plate CXXXII. fig. 13.)

Agrotis atra, Guen. Noct. i. p. 272 (1852).
Agrotis testaceicollis, Guen. Noct. i. p. 273 (1852).
Agrotis cinereicollis, Guen. Noct. i. p. 273 (1852).
Agrotis restituta, Guen. Noct. i. p. 273 (1852).
Mamestra lucifera, Wlk. xxxii. 668 (1865).
Xylina collaris, Wlk. xxxiii. 752 (1865).

Head and thorax black with a greyish gloss and slightly mixed with grey; palpi black at base, whitish at tips; tarsi fuscous ringed with whitish; abdomen greyish brown. Fore wing black-brown with a greyish gloss; subbasal line represented by blackish points below costa and cell; antemedial line indistinct, blackish, waved, oblique; orbicular minute, round, ochreous white defined by black; reniform a small ochreous brown lunule defined by black, with slight dark line in centre and diffused dark shade before it, its lower extremity produced to a point; an indistinct sinuous

medial line; postmedial line indistinct, blackish, bent outwards below costa, then dentate, angled inwards in submedian fold; subterminal line indistinct, dark, with slight black streak before it at middle, slightly angled outwards at vein 7, then oblique; cilia fuscous mixed with some greyish brown. Hind wing fuscous brown with a greyish tinge; cilia white at tips; the underside whitish, suffused and irrorated with brown, a slight discoidal lunule, traces of a curved postmedial line and apical blackish patch extending to vein 6.

Ab. 1. Fore wing with white point at lower extremity of reniform, the lines and markings more distinct.

Ab. 2. *lucifera*. Fore wing with the reniform white.

Ab. 3. *testaceicollis*. Tegulæ whitish, tinged with rufous.

Ab. 4. Hind wing whitish, the veins and markings tinged with brown.

(*a*) *cinereicollis*. Tegulæ grey; fore wing black with the markings prominent.

(*b*) *restituta*. Tegulæ concolorous; fore wing greyish fuscous with the markings obsolescent.

Hab. Queensland, Moreton Bay (*Diggles*), 2 ♀ type *collaris*; N. S. Wales (*Raynor*), 1 ♀ : S. Australia, Parkside (*Lower*), 1 ♂, 2 ♀; Tasmania (*Hardwicke*, *Doubleday*), 3 ♀ type *lucifera*, Launceston (*Littler*), 1 ♂. *Exp.* 36–42 millim. Types † *atra*, *testaceicollis*, *cinereicollis*, and *restituta* in Mus. Paris.

4073. Ariathisa microdes. (Plate CXXXII. fig. 14.)

Caradrina microdes, Lower, Pr. Linn. Soc. N. S. W. xxvi. p. 649 (1902).

♂. Head and thorax pale rufous mixed with fuscous; palpi black, ochreous at tips; pectus whitish; tarsi black ringed with white; abdomen whitish tinged with brown. Fore wing fuscous mixed with some grey and rufous; subbasal line black defined by grey on outer side, excurved below costa and ending at submedian fold in which there is a slight fulvous streak beyond it; antemedial line black defined by grey on inner side, oblique, minutely waved; orbicular a fulvous point defined by black; reniform a small white lunule defined by black and some fulvous scales, its lower extremity slightly produced; a somewhat diffused oblique blackish medial line; postmedial line black defined by grey on outer side, bent outwards below costa, then oblique, minutely waved and slightly incurved at submedian fold, some ochreous points beyond it on costa; subterminal line indistinct, greyish, slightly defined by fuscous on inner side and with slight black and fulvous streaks before it at middle, somewhat excurved below vein 7 and at middle; a terminal series of black points. Hind wing grey tinged with reddish brown; cilia white with brownish line at base; the underside white irrorated with brown, thickly on costal area, a black discoidal lunule and diffused brown apical patch extending to discal fold.

♀. Fore wing more uniform in colour, the markings indistinct, the reniform with brown centre.

Hab. N. S. Wales, Broken Hill (*Lower*), 1 ♂, 1 ♀. *Exp.* 24 millim. Type † in Coll. Lower.

4074. Ariathisa atrisquamata. (Plate CXXXII. fig. 15.)

Caradrina atrisquamata, Lower, Pr. Linn. Soc. N. S. W. xxvi. p. 653 (1902).

♀. Head and thorax dull brown; palpi blackish at sides; abdomen pale fuscous, the ventral surface white irrorated with brown. Fore wing dull grey-brown irrorated with fuscous; subbasal line double, the inner line black, waved, from costa to submedian fold; antemedial line double, the outer line black, irregularly waved; orbicular represented by a pale point; reniform small, quadrate, blackish with grey edges, placed on the indistinct waved medial line; postmedial line indistinct, double, waved, bent outwards below costa and incurved below vein 3; an indistinct sinuous subterminal line with slight black streaks before it at middle. Hind wing pale brown; the underside whitish with discoidal points and brownish apical patch.

Ab. 1. Fore wing with the small white spot on outer edge of reniform.—Tasmania.

Hab. Victoria, Melbourne, type † ♀ in Coll. Lower; Tasmania, Hobart (*Norman*), 1 ♀. *Exp.* 26 millim.

4075. Ariathisa cryphæa. (Plate CXXXII. fig. 16.)

Caradrina cryphæa, Turner, Tr. R. Soc. S. Austr. xxxii. p. 58 (1908).

♂. Head and thorax grey tinged with rufous; palpi with black patches at sides, whitish in front and at tips; lower part of frons white; tegulæ with slight medial brown line; tarsi black ringed with white; abdomen grey. Fore wing grey tinged with rufous especially on terminal area and slightly irrorated with black; subbasal line represented by double black striæ from costa; antemedial line double at costa, oblique, waved; claviform absent; orbicular a small grey spot ringed with brown; reniform a diffused rufous spot; a somewhat diffused blackish medial line, oblique from costa to lower angle of cell, then slightly angled inwards below vein 2; postmedial line indistinctly double and with slight black streaks beyond the inner line on the veins, slightly bent outwards below costa, angled inwards in discal fold and below vein 2; subterminal line only defined by blackish suffusion on inner side, slightly angled outwards at vein 7 and excurved at middle; a terminal series of black points. Hind wing grey tinged with fuscous; cilia whitish with fuscous line through them, wholly fuscous except at base towards apex; the underside white tinged with brown except costal area which is irrorated with black, the apical area suffused with fuscous, a small discoidal spot and curved postmedial line.

Ab. 1. More tinged with fuscous and with hardly any rufous shades; fore wing with the medial shade stronger; hind wing with the underside whiter and with less black suffusion on apical area.

Hab. Victoria, Gisborne (*Lyell*), 1 ♂, Castlemaine (*Drake*), 1 ♂. *Exp.* 36 millim. Type † ♂ in Coll. Lyell.

4076. Ariathisa heterogama. (Plate CXXXII. fig. 17.)

Caradrina heterogama, Lower, ined.

♂. Head and thorax white more or less strongly suffused with red-brown; palpi black at base; tegulæ with the basal half black; tarsi blackish ringed with white; abdomen ochreous with slight fuscous segmental lines, the ventral surface white. Fore wing reddish ochreous, irrorated with black; subbasal line represented by black striæ from costa and cell; antemedial line black, oblique, waved; orbicular a faint minute reddish spot; reniform a small reddish lunule defined by brown on inner side; an indistinct blackish medial line, oblique from costa to median nervure, then sinuous; postmedial line slight, blackish, bent outwards below costa, then dentate, incurved below vein 4 and angled inwards in submedian fold, some pale points beyond it on costa; subterminal line slight, pale, defined on inner side by blackish suffusion, angled outwards at vein 7, then oblique, dentate; a terminal series of black points; cilia with a fine pale line at base. Hind wing white, the veins and apical part of termen tinged with brown; the underside with the costal area slightly irrorated with black, a discoidal point, the apex blackish.

♀. Head and thorax fuscous and white; fore wing suffused with fuscous and white, the terminal half of inner area and the terminal area less suffused.

Hab. N. S. Wales, Broken Hill (*Lower*), 4 ♂, 4 ♀. *Exp.* 34–38 millim.

4077. Ariathisa monochroa. (Plate CXXXII. fig. 18.)

Caradrina monochroa, Lower, Pr. Linn. Soc. N. S. W. xxvi. p. 652 (1902).

♂. Head and thorax rufous with a slight greyish tinge; palpi whitish with black marks at sides of 1st and 2nd joints; lower part of frons whitish; pectus whitish mixed with rufous; tarsi fuscous ringed with white; abdomen whitish dorsally suffused with rufous, ventrally irrorated with rufous. Fore wing rufous with slight grey irroration; subbasal line represented by a blackish striga from costa; antemedial line slight, blackish, oblique from costa to submedian fold where it is angled, then inwardly oblique; orbicular a slight white point; reniform small faintly defined by black; postmedial line slight, blackish, bent outwards below costa, then dentate, oblique below vein 4 and angled inwards in submedian fold; subterminal line absent; a terminal series of black striæ. Hind wing pale reddish brown; cilia whitish at tips; the underside white irrorated with black-brown, a discoidal point, postmedial series of minute streaks on the veins, and blackish apical patch extending to vein 6.

Ab. 1. Head, thorax, and fore wing suffused with fuscous, the

last with the orbicular defined by some black scales and the reniform filled in with blackish, hind wing darker.—Birchip.

♀. Fore wing with the reniform white with brown line in middle, its lower extremity produced, the subterminal line sometimes represented by a series of whitish marks slightly defined by brown on inner side and excurved below vein 7 and at middle; hind wing whiter.

Abdomen of male with lateral tufts of long brown hair from base.

Hab. Victoria, Birchip (*Lower*), 1 ♂; S. Australia, Parkside (*Lower*), 1 ♂, 2 ♀. *Exp.* 34 millim. Type † in Coll. Lower.

4078. Ariathisa adelphodes. (Plate CXXXII. fig. 19.)

Caradrina adelphodes, Lower, Pr. Linn. Soc. N. S. W. xxvi. p. 654 (1902).

♂. Head and thorax bright rufous mixed with whitish; palpi dark brown at base, white at tips; frons white below, dark brown above; pectus and legs white mixed with some brown; abdomen white slightly mixed with rufous, ventrally suffused with rufous. Fore wing white suffused and irrorated with bright rufous; subbasal line represented by small black spots below costa and cell; antemedial line indistinctly double filled in with white and with black spots on the outer line at costa and submedian fold, oblique, waved; orbicular small, round, pure white defined by black; reniform a small square pure white spot with black marks on inner and outer sides; postmedial line slight, blackish defined by whitish on outer side, bent outwards below costa, then oblique, minutely waved and slightly incurved at submedian fold, some white points beyond it on costa; subterminal line whitish defined on inner side by slight somewhat dentate black marks, angled outwards below vein 7 and excurved at middle; a terminal series of black points. Hind wing pure white; the underside with the costal area slightly irrorated with brown.

Hab. N. S. Wales, Broken Hill (*Lower*), 1 ♂. *Exp.* 32 millim. Type † in Coll. Lower.

*4079. Ariathisa leucosticta. (Plate CXXXII. fig. 20.)

Caradrina leucosticta, Turner, Tr. R. Soc. S. Austr. xxxii. p. 58 (1908).

♀. Head and thorax dull reddish brown, the head mixed with ochreous white; palpi black at base, whitish at tips; fore tibiæ and tarsi blackish ringed with ochreous white; abdomen greyish mixed with dark brown. Fore wing dull reddish brown with a purplish tinge and irrorated with black especially on the veins; a slight streak of white scales in base of cell; subbasal line represented by two slight blackish striæ from costa; antemedial line defined by greyish on inner side, double at costa, waved, slightly oblique; claviform absent; orbicular a minute white point; reniform a small white spot surrounded by black scales; traces of a medial line; postmedial line double at costa and with black points beyond it on the veins, slightly bent outwards below costa

to just beyond the cell, then minutely waved and slightly incurved below vein 4, some pale points beyond it on costa; subterminal line very indistinct, pale, defined on inner side by black scales and very slight streaks on the veins, somewhat excurved below vein 7 and at middle; a series of small white spots and black points on termen. Hind wing grey uniformly tinged with brown; the underside whitish irrorated with brown, a slight discoidal spot and traces of a curved postmedial line.

Hab. Victoria (*Lyell*), type † ♀ in Coll. Drake. *Exp.* 28 millim.

4080. Ariathisa interferens. (Plate CXXXII. fig. 21.)

Dianthœcia interferens, Wlk. xi. 507 (1857).

Head and thorax reddish brown mixed with some grey and fuscous; palpi black, white in front; lower part of frons yellowish white; basal joint of antennæ white in front; tibiæ and tarsi black ringed with white; abdomen greyish ochreous with slight fuscous segmental lines. Fore wing grey suffused with rufous and thickly irrorated with dark brown; subbasal line black defined by whitish on outer side, from costa to submedian fold; antemedial line double, black filled in with whitish, slightly angled outwards below costa, then oblique, sinuous; orbicular absent; reniform a black lunule with its lower extremity produced to postmedial line, some whitish beyond it; postmedial line black defined by whitish on outer side, double at costa, slightly bent outwards below costa, then minutely waved, somewhat incurved below vein 4, some pale points beyond it on costa; subterminal line slight, greyish, defined on inner side by some dark suffusion and somewhat dentate black marks at middle, very minutely waved. Hind wing greyish suffused with yellowish brown; cilia whitish at tips; the underside whitish tinged with ochreous and irrorated with fuscous, traces of a postmedial line, a large apical blackish patch extending to discal fold.

Hab. S. Australia, Adelaide (*Davies*), 1 ♀ type; W. Australia, Perth, 2 ♀; Tasmania, Hobart (*Norman*), 1 ♂. *Exp.* 28–30 millim.

4081. Ariathisa flexirena. (Plate CXXXII. fig. 22.)

Apamea flexirena, Wlk. xxxii. 673 (1865).

Head and thorax dark brown mixed with grey; palpi black, grey at tips; frons with blackish band above; tegulæ whitish at middle and with black point at base; pectus white mixed with some brown; tibiæ blackish, the tarsi black ringed with white; abdomen whitish dorsally suffused with brown, ventrally irrorated with brown. Fore wing grey suffused with fuscous brown and irrorated slightly with fuscous, the antemedial area pale grey; subbasal line black, straight, from costa to submedian fold; antemedial line black, oblique, almost straight; orbicular a black point slightly defined by ochreous; reniform a black lunule with its lower extremity produced to the postmedial line, a greyish patch

beyond it; postmedial line slight, defined by greyish on outer side, slightly bent outwards below costa, then oblique, minutely waved, some whitish points beyond it on costa; subterminal line indistinct, greyish, defined on inner side by blackish suffusion, slightly angled outwards below vein 7 and excurved at middle; a fine black terminal line with grey striæ on inner side. Hind wing greyish suffused with fuscous brown, somewhat paler at base; cilia with ochreous line at base followed by a fuscous line and white tips; the underside whitish tinged with brown, the costal area irrorated with brown, a slight discoidal lunule and diffused dark apical patch extending to discal fold.

Ab. 1. Fore wing with the antemedial area concolorous.

Hab. Queensland, Moreton Bay (*Diggles*), 1 ♂ type, Brisbane (*Turner*), 1 ♂, 2 ♀; N. S. Wales (*Mathew*), 1 ♂. *Exp.* 26–30 millim.

*4082. **Ariathisa adelopa.** (Plate CXXXII. fig. 23.)

Caradrina adelopa, Lower, ined.

♂. Head and thorax fuscous mixed with grey; palpi, vertex of head, and antennæ rufous; pectus ochreous white; legs ochreous and fuscous, the tarsi banded with black; abdomen fuscous and grey. Fore wing fuscous grey thickly irrorated with black, the terminal area fuscous; subbasal line represented by a black point on costa; antemedial line indistinct, oblique, waved, angled outwards at submedian fold and with black point at costa; reniform an oblique blackish lunule with small rufous lunule on its outer edge, placed on the indistinct waved medial line which is oblique from costa to lower angle of cell; postmedial line indistinct, waved, bent outwards below costa, slightly incurved at discal fold and more strongly below vein 4; subterminal line indistinct, slightly angled outwards at vein 7 and excurved at middle; a terminal series of slight striæ. Hind wing dark fuscous; underside grey, the costal area irrorated with black, a small black discoidal lunule, the terminal area blackish, deeper towards apex.

Abdomen with large exsertible lateral tufts from base above the stigmata.

Hab. Victoria, Gisborne (*Lyell*), in Coll. Turner. *Exp.* 42 millim.

*4083. **Ariathisa nycteris.** (Plate CXXXII. fig. 24.)

Caradrina nycteris, Turner, Tr. R. Soc. S. Austr. xxxii. p. 60 (1908).

♀. Head and thorax brownish grey suffused with fuscous; palpi blackish, pale at tips; tarsi blackish with pale rings; abdomen grey strongly mixed with brown. Fore wing grey almost wholly suffused with fuscous brown; a black point at base; subbasal line black defined by grey on outer side, waved, from costa to submedian fold; antemedial line double filled in with grey, oblique, dentate; claviform absent; orbicular represented by a white point defined

by fuscous; reniform a narrow blackish lunule; postmedial line defined by grey on outer side, bent outwards below costa, then minutely dentate, incurved below vein 4, some whitish points beyond it on costa; subterminal line represented by slight whitish marks with small dentate blackish marks on their inner side, excurved below vein 7 and at middle, the interspaces beyond them with slight black streaks with white points just before termen; cilia with a slight pale line at base. Hind wing greyish wholly suffused with brown; cilia whitish with a fuscous line through them; the underside white thickly irrorated with brown, the apical area suffused with brown, a slight discoidal spot and curved postmedial line.

Hab. N. S. Wales, Emu Plains, type † ♀ in Coll. Turner. *Exp.* 32 millim.

*4084. **Ariathisa basisticha.** (Plate CXXXII. fig. 25.)

Caradrina basisticha, Turner, Tr. R. Soc. S. Austr. xxxii. p. 60 (1908).

♂. Head and tegulæ white tinged with red-brown; palpi black except at tips; antennæ black above; thorax pale brown mixed with fuscous; tarsi blackish with pale rings; abdomen greyish suffused with red-brown. Fore wing greyish suffused with red-brown and fuscous and irrorated with black; subbasal line slight, black, waved, from costa to submedian fold; a black streak below the cell to the antemedial line, which is indistinct, double, waved, oblique, angled inwards on median nervure and vein 1; claviform absent; orbicular a minute whitish spot defined by black scales; reniform represented by two bars of whitish and black scales; postmedial line indistinct, double, minutely waved, incurved at discal fold and oblique below vein 4; the interspaces of terminal area with slight black streaks; subterminal line indistinct, pale, slightly defined on inner side by fuscous towards costa, somewhat angled outwards at vein 7 and excurved at middle; a terminal series of minute black points; cilia with a fine pale line at base. Hind wing white uniformly tinged with brown; cilia white with a brown line near base; the underside white irrorated with brown especially on costal area, a slight discoidal spot and traces of postmedial line from costa to vein 6.

Hab. Queensland, Brisbane, type † ♂ in Coll. Turner. *Exp.* 28 millim.

4085. **Ariathisa striolata.** (Plate CXXXII. fig. 26.)

Caradrina striolata, Butl. Trans. Ent. Soc. 1886, p. 393.

♀. Head white slightly irrorated with brown; palpi fuscous except towards tips; thorax white mixed with red-brown; abdomen white slightly tinged with red-brown, ventrally suffused with red-brown. Fore wing whitish tinged with red-brown and irrorated with purplish fuscous, the costal area whiter; subbasal line represented by blackish points on costa and median nervure with a point beyond them in cell; antemedial line blackish, angled

outwards on subcostal nervure and in submedian fold and inwards on median nervure and vein 1; orbicular defined by some slight black points; reniform small, defined by black with some white scales round it; postmedial line blackish, oblique from costa to vein 7, then minutely waved and with black points at the veins, incurved at submedian fold and angled outwards at vein 1; a subterminal series of black streaks on veins 8 to 4, longer on veins 6, 5 and extending to postmedial line; a terminal series of black points; cilia chequered fuscous and whitish. Hind wing white; the underside with the costal area suffused and irrorated with red-brown, a brown discoidal point.

Hab. Fiji, 1 ♀ type. *Exp.* 30 millim.

*4086. **Ariathisa acallis.** (Plate CXXXII. fig. 27.)

Caradrina acallis, Turner, Tr. R. Soc. S. Austr. xxvii. p. 4 (1903).

♂. Head and thorax brownish ochreous; abdomen whitish tinged with fuscous. Fore wing greyish ochreous with slight dark irroration and a brown shade through the cell expanding at termen to apex and vein 2; a black point in cell near base; orbicular small, round, ochreous with small black spots on its inner and outer sides; reniform small, very indistinct, with ill-defined black streaks on the veins beyond it; a terminal series of black points. Hind wing white, tinged with ochreous towards costa; the underside with discoidal point, the costal area suffused with brown.

Hab. Queensland, Brisbane (*Turner*), 1 ♂, Cairns. *Exp.* 28 millim. Type † ♂ in Coll. Turner.

*4087. **Ariathisa melanographa.** (Plate CXXXII. fig. 28.)

Caradrina melanographa, Turner, Tr. R. Soc. S. Austr. xxxii. p. 59 (1908).

♂. Head, thorax, and abdomen grey tinged with pale red-brown; palpi blackish except at extremity. Fore wing grey very slightly tinged with pale red-brown and sparsely irrorated with black, some black scales at base below the cell; the subbasal line represented by an oblique black striga from costa; the antemedial line black, interrupted, oblique, minutely dentate, strongly inwards on vein 1; claviform and orbicular obsolete; reniform represented by some black points and scales; postmedial line black, bent outwards below costa, excurved and produced to short streaks beyond the cell, incurved and angled outwards on vein 1; terminal area tinged with fuscous; the subterminal line very indistinct, greyish with slight black streaks before it at middle; a terminal series of white points and some black points at base of cilia. Hind wing brownish grey; the underside whitish irrorated with fuscous and with slight black discoidal lunule.

Ab. 1. Head, thorax, and fore wing largely suffused with black.

Hab. Victoria, Blackrock (*Lyell*), type ♂ in Coll. Turner. *Exp.* 28 millim.

Genus **ACOPA**.

Type.
Acopa, Harv. Bull. Buff. Soc. Nat. Sci. ii. p. 279 (1874) ..... *carina*.

Proboscis absent; palpi slight, porrect, hardly reaching beyond the frons and clothed with rough hair; frons with rounded prominence; eyes large, round; antennæ of male serrate and fasciculate; thorax clothed chiefly with rough scales, the prothorax with spreading crest, the metathorax with very large crest; build slender; tibiæ fringed with rather long hair; abdomen with some rough hair at base but without crests. Fore wing long and narrow, the costa somewhat excised beyond middle, the apex rounded, the termen obliquely curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with the cell very long; veins 3, 4 from angle; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Hind wing fuscous.
  a. Fore wing with the orbicular and reniform white defined by black ..... *pacifica*.
  b. Fore wing with the orbicular and reniform indistinct, blackish ..... *carina*.
B. Hind wing white.
  a. Fore wing strongly irrorated with red-brown, the postmedial line nearly evenly sinuous..... *incana*.
  b. Fore wing slightly irrorated with red-brown, the postmedial line minutely waved ..... *perpallida*.

*4088. ? Acopa pacifica.

Acopa pacifica, H. Edw. Papilio, iv. p. 46 (1884); Smith, Cat. Noct. N. Am. p. 265.

♂. Head and thorax dark grey; legs and abdomen fuscous. Fore wing dark grey with some white suffusion from base of inner margin to apex, the medial area suffused with white towards costa, darker at inner margin; subbasal line present; antemedial line strong, black, slightly oblique, with a slight tooth at middle; orbicular and reniform very distinct, white defined by black and with some brownish scales in centres; postmedial line oblique, arising from the white suffusion below costa; postmedial area suffused with brown; a black streak from apex and black terminal line; cilia grey-brown. Hind wing fuscous; cilia white; the underside paler, with traces of a medial band and some whitish streaks on costal area.

Hab. U.S.A., Arizona. *Exp.* 25 millim. This species is unknown to me.

4089. Acopa carina.

Acopa carina, Harv. Bull. Buff. Soc. Nat. Sci. ii. p. 279 (1874); Smith, Cat. Noct. N. Am. p. 264.

♂. Head, thorax, and abdomen black-brown mixed with some white. Fore wing white largely suffused and irrorated with black-brown, the medial area almost wholly suffused except towards

costa; subbasal line black-brown, diffused on inner side and defined by white on outer, angled outwards below costa and cell and ending at vein 1; antemedial line defined by white on inner side and diffused on outer, angled outwards in cell and inwards on median nervure, then sinuous; claviform and orbicular represented by indistinct

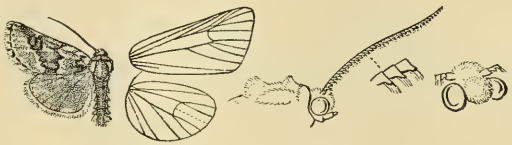


Fig. 107.—*Acopa carina*, ♂. ½.

elongate dark marks, the reniform by a dark bar; postmedial line black-brown defined by white on outer side, minutely dentate, oblique from costa to vein 6 and inwardly oblique below vein 4, a diffused oblique dark shade from costa towards apex to postmedial line at vein 6; a diffused dark brown subterminal band; a terminal series of black-brown striæ. Hind wing greyish almost entirely suffused with fuscous brown; cilia grey mixed with dark brown. Underside of both wings dark brown slightly tinged with grey.

♀. Head, thorax, and abdomen white mixed with some brown; fore wing white irrorated with yellowish brown, the medial area and subterminal band somewhat darker; markings similar; hind wing paler fuscous brown; underside of both wings white tinged with brown.

Hab. U.S.A., Texas, 1 ♂, 1 ♀ type. *Exp.* 28 millim.

4090. **Acopa incana.** (Plate CXXXII. fig. 29.)

Acopa incana, H. Edw. Papilio, ii. p. 128 (1882); Smith, Cat. Noct. N. Am. p. 264.

♀. Head and thorax creamy white mixed with brown; abdomen white slightly irrorated with brown. Fore wing creamy white irrorated with brown, sometimes leaving white streaks below costa and on inner margin; antemedial line nearly medial, brown, angled outwards in cell and submedian fold and inwards on median nervure and vein 1; reniform defined by diffused brown, its upper extremity produced to a point and met by an oblique diffused streak from costa near apex; postmedial line brown, excurved to vein 4, then incurved and slightly sinuous; a diffused subterminal brown shade, the veins beyond it streaked with brown; a terminal series of slight brown lunules; cilia with a brown line through them. Hind wing white faintly tinged with brown; traces of a discoidal lunule; a fine brown terminal line.

Hab. U.S.A., Colorado, Glenwood Springs (*Oslar*), 2 ♀, Arizona, *Exp.* 30 millim.

4091. Acopa perpallida. (Plate CXXXII. fig. 30.)

Acopa perpallida, Grote, Can. Ent. x. p. 68 (1878); Smith, Cat. Noct. N. Am. p. 264.

♂. Head and thorax white faintly tinged in parts with ochreous brown and irrorated with some dark brown; legs tinged with ochreous brown; abdomen white dorsally tinged with ochreous brown. Fore wing white, the basal inner area and the medial area below the cell tinged with brownish ochreous, the veins slightly streaked with brown; subbasal line indistinct, yellow-brown, strongly angled outwards below cell and ending at vein 1; antemedial line yellow-brown, strongly angled outwards in cell, submedian fold, and above inner margin and inwards on median nervure and vein 1; claviform and orbicular absent; reniform rather indistinctly defined by brown and with some brown in centre; postmedial line brown, minutely waved, oblique from costa to above vein 5, then inwardly oblique, an oblique dark shade from costa beyond it meeting it at vein 6; a diffused oblique subterminal brown band except towards costa; a terminal series of brown striæ; cilia white with a few brown scales at base and faint line near base. Hind wing white slightly irrorated with brown, a slight brown terminal line. Underside of fore wing mostly suffused with brown; hind wing with small brown discoidal lunule and traces of diffused postmedial bar from costa to vein 6.

Hab. U.S.A., Kansas (*Snow*), 2 ♂ type. *Exp.* 32 millim.

Genus ACOSMETIA.

	Type.
Acosmetia, Steph. Ill. Brit. Ent., Haust. iii. p. 121 (1829)	*caliginosa.*
Hydrilla, Boisd. Gen. et Ind. Meth. p. 138 (1840)	*caliginosa.*

Proboscis fully developed; palpi uptured, the 2nd joint reaching about to middle of frons and moderately scaled, the 3rd moderate; frons with small rounded prominence; eyes large, round; antennæ of male ciliated; thorax clothed with hair and scales mixed and without crests; build slender; tibiæ slightly fringed with hair; abdomen without crests. Fore wing typically short and broad, the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with the lines double	*tenuipennis.*
B. Fore wing with the lines single.	
a. Hind wing grey tinged with red-brown	*caliginosa.*
b. Hind wing pure white	*arida.*

4092. Acosmetia tenuipennis, n. sp. (Plate CXXXIII. fig. 1.)

♂. Head, thorax, and abdomen purplish grey mixed with reddish brown. Fore wing rather narrow, purplish grey suffused and irrorated with reddish brown; antemedial line indistinctly double filled in with grey, slightly angled outwards on subcostal and

median nervures, then oblique; orbicular and reniform absent; postmedial line indistinctly double filled in with grey, slightly bent outwards below costa, excurved to vein 4, then oblique; subterminal line indistinct, grey defined on inner side by dark suffusion, slightly excurved below 7 and oblique below vein 3; a terminal series of dark striæ. Hind wing purplish grey tinged with brown; the underside irrorated with brown, a slight discoidal spot.

Hab. Formosa, 1 ♂ type. *Exp.* 20 millim.

4093. Acosmetia caliginosa.

Noctua caliginosa, Hübn. Eur. Schmett., Noct. f. 474 (1818); Dup. Lép. Fr., Suppl. iii. p. 341, pl. 31. f. 4; Steph. Ill. Brit. Ent., Haust. iii. p. 122; Herr.-Schäff, Eur. Schmett., Noct. f. 435; Staud. Cat. Lep. pal. p. 199.
Anthophila litorea, Frr. Neue Beitr. v. p. 163, pl. 479. ff. 1, 2 (1845).
Caradrina stagnicolor, Dup. Lép. Fr. viii. p. 111, pl. 107, f. 6 (nec Ochs.).
Acosmetia aquatilis, Guen. Noct. i. p. 240, pl. 5. f. 2 (1852).
Acosmetia tristis, Teich, Stett. ent. Zeit. 1896, p. 29.

Head and thorax purplish brown tinged with greyish; the palpi, frons, and fore legs tinged with fuscous; abdomen grey irrorated with brown. Fore wing silky purplish brown thickly irrorated with grey; antemedial line indistinct, brown, strongly waved and angled inwards on vein 1; stigmata absent; postmedial line indistinct, brown, interrupted, bent outwards below costa, then with short dark streaks beyond it on the veins, slightly incurved at

Fig. 108.—*Acosmetia caliginosa*, ♂ ½.

discal fold and incurved below vein 4; traces of a pale subterminal line slightly defined by brown on inner side, angled outwards at vein 7 and excurved at middle; a terminal series of slight dark striæ; cilia with a fine dark line near base. Hind wing silky grey suffused with pale red-brown; cilia rather paler with a slight brown line near base; the underside whitish thickly irrorated with pale red-brown.

Ab. 1. *aquatilis*. Paler; fore wing yellowish grey.—Urals, Armenia, Altai, Ala Tau.

Hab. Britain, Leech Coll.; France; Germany, Zeller, Frey, & Leech Colls.; Austria; Hungary, Leech Coll.; Switzerland; ? Spain, Catalonia; N. Italy; ? Sweden; Balcan States; Russia, Urals, Zeller Coll.; W. Turkestan, Ala Tau; W. Siberia, Altai. *Exp.* 28–34 millim.

Larva. Meyr. Lep. Brit. p. 114; Barrett, Brit. Lep. v. p. 263, pl. 219. f. 2.

Sap-green with yellow segmental incisions, the lines fine, white. Food-plants: *Serratula tinctoria*, *Sanguisorba*, *Rumex*.

*4094. Acosmetia arida. (Plate CXXXIII. fig. 2.)

Acosmetia arida, de Joan. Ann. Soc. Ent. Fr. 1909, ined.

♀. Head white tinged with ochreous; antennæ brownish; thorax ochreous; pectus and legs ochreous white, the tarsi ringed with brown; abdomen ochreous white. Fore wing ochreous irrorated with red-brown; subbasal line rather diffused, black, slightly bent outwards at median nervure and ending at vein 1; antemedial line rather diffused, black, excurved, slightly angled inwards at vein 1; medial area irrorated with some black scales, especially in cell, and with traces of a medial line; postmedial line blackish, oblique from costa to vein 6, then inwardly oblique and angled inwards in submedian fold; subterminal line very indistinct, ochreous, excurved below vein 7, then oblique; cilia white. Hind wing pure white.

Hab. Egypt, Mokattam in Coll. de Joannis. *Exp.* 20 millim.

Genus **PETILAMPA.**

	Type.
Petilampa, Auriv. Nord. Fjär. p. 156 (1890)	*minima.*
Platyperigea, Smith, Trans. Am. Ent. Soc. xxi. p. 60 (1894)	*camina.*

Proboscis aborted, small; palpi porrect, extending about the length of head, the 2nd joint fringed with long hair below, the 3rd moderate; frons smooth; eyes large, round; antennæ of male ciliated; thorax clothed with rough hair and hair-like scales and without crests; build slender; tibiæ fringed with rather long hair; abdomen without crests; wings of male ample, of female aborted and considerably reduced. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with the postmedial line produced to a series of black points on the veins ..... *minima.*
B. Fore wing with the postmedial line not produced to a series of black points on the veins.
  a. Fore wing with the postmedial line incurved below vein 4.
    a^1. Fore wing with the antemedial line strongly angled outwards in submedian fold ..... *palustris.*
    b^1. Fore wing with the antemedial line not angled outwards in submedian fold ..... *anotha.*
  b. Fore wing with the postmedial line oblique from below costa to inner margin ..... *camina.*

4095. Petilampa minima.

Noctua minima, Haworth, Lep. Brit. p. 216 (1809).
Phytometra lutescens, Haworth, Lep. Brit. p. 260 (1809).
Phytometra arcuosa, Haworth, Lep. Brit. p. 260 (1809); Steph. Ill. Brit. Ent., Haust. iii. p. 123; Staud. Cat. Lep. pal. p. 199.
Caradrina duponchellii, Boisd. Ind. Meth. p. 82 (1829); Dup. Lép. Fr., Suppl. iii. p. 307, pl. 28. f. 4.
Noctua airæ, Frr. Neue Beitr. ii. p. 109, pl. 162. ff. 1–3 (1836); Herr.-Schäff. Eur. Schmett., Noct. ff. 178–9.

Acosmetia morrisii, Morris, Natural. ii. p. 88 (1837); Humphrey & Westwood, Brit. Moths, i. p. 245, pl. 54. f. 12.

♂. Head and thorax rufous, mixed with whitish; palpi fuscous, pale at tips; antennæ fuscous; legs fuscous, the tarsi ringed with whitish; abdomen pale rufous dorsally tinged with brown. Fore wing whitish suffused with pale rufous, the postmedial area except towards costa and the terminal area rather whiter; antemedial line indistinct, dark, waved, angled inwards to black points on the veins; a slight dark point at lower angle of cell; postmedial line very indistinct, dark, bent outwards below costa, then minutely dentate and produced to dark points on the veins, excurved to vein 4,

Fig. 109.—*Petilampa minima*, ♂. ½.

then incurved; a faint dark subterminal line, excurved below vein 7 and at middle and incurved at submedian fold; a terminal series of dark striæ; cilia with a dark line at middle. Hind wing whitish, suffused with pale red-brown; cilia white, yellowish at base and with brown line at middle; the underside with the costal area tinged with rufous, a slight dark discoidal point, indistinct curved postmedial line, and terminal series of striæ.

♀. Fore wing with the medial area slightly suffused with brown.

Ab. 1. *morrisi*. Whiter.—Britain.

Ab. 2. *lutescens*. Fore wing of male more suffused with rufous, of female variegated with rufous.

Hab. Britain, type *lutescens*, Leech Coll.; France; Denmark, Leech Coll.; Germany, Zeller, Frey, and Leech Colls.; Austria; Switzerland. *Exp.* ♂ 22–34, ♀ 20–24 millim.

Larva. Meyr. Brit. Lep. p. 121; Barrett, Lep. Brit. v. p. 270, pl. 219. f. 4.

Whitish ochreous, sometimes tinged with pink, with transverse darker or brownish bars; dorsal and subdorsal lines paler; head brown; thoracic plate pale brown. Food-plant: the base of stems of *Aira cæspitosa*. 4–5.

4096. Petilampa palustris.

Noctua palustris, Hübn. Eur. Schmett., Noct. f. 367 (1808); Dup. Lép. Fr., Suppl. iii. p. 578, pl. 48. ff. 4 *a*, *b*; Frr. Neue Beitr. pl. 683; Herr.-Schäff. Eur. Schmett., Noct. f. 292; Staud. Cat. Lep. pal. p. 198.
Caradrina lutea, Frr. Neue Beitr. v. p. 121 (1845).
Caradrina luteola, Frr. Neue Beitr. pl. 455. f. 3 (1845).
Caradrina exilis, Ev. Bull. Mosc. 1842, p. 548.
Hydrilla aboleta, Guen. Noct. i. p. 238 (1852).
Hydrilla melanochroa, Staud. Rom. Mém. vi. p. 488 (1892).

♂. Head and thorax brownish ochreous tinged with grey;

abdomen whitish tinged with ochreous. Fore wing greyish ochreous irrorated with brown; antemedial line indistinct, brown, strongly angled outwards in submedian fold, angled inwards on vein 1 and excurved above inner margin; orbicular a rather elongate dark point; reniform a narrow dark lunule; postmedial line indistinct, brown, very slightly waved, excurved from costa to vein 4, then oblique; subterminal line faintly defined by brown on inner side and slightly waved, incurved below vein 3; a terminal series of slight dark striæ; cilia with a slight brown line at base. Hind wing whitish tinged with brownish ochreous especially on costal area; the underside with the costal area irrorated with brown, a slight brown discoidal spot and traces of a postmedial line from costa to discal fold.

♀. Much more suffused with fuscous.

Ab. 1. *aboleta*. Paler; fore wing more ochreous with the markings indistinct; hind wing whiter.—Norway, Lapland.

Ab. 2. *sajana*, Bang Haas, ined. Greyer.—Sajan.

Ab. 3. *melanochroa*. Much darker, fore wing of both sexes greyish fuscous.—E. Siberia.

Hab. Britain; France; Germany, Zeller and Leech Colls. Austria; Hungary; Switzerland, Zeller, Frey, and Leech Colls.; N. Italy; Norway, Leech Coll.; Lapland (*Schöyen*); Finland, Zeller Coll.; S. Russia, Urals; Armenia; Mongolia, Urga; E. Siberia, Sajan, 1 ♂, Amurland, Ussuri; Kamtchatka. *Exp.* ♂ 32–40, ♀ 22–26 millim.

Larva. Meyer, Brit. Lep. p. 121; Barrett, Lep. Brit. v. p. 265, pl. 219. f. 3. Brownish; dorsal line whitish; warts whitish; head black. Food-plants: *Plantago*, &c. 7–8.

*4097. Petilampa anotha. (Plate CXXXIII. fig. 3.)

Platyperigea anotha, Dyar, Can. Ent. xxxv. p. 29 (1904).

♂. Head, thorax, and abdomen greyish ochreous irrorated with dark scales, the head and palpi blackish brown. Fore wing glossy greyish ochreous irrorated with dark scales; subbasal line represented by dark striæ from costa and cell with a dark shade before it at costa; antemedial line black-brown with a spot at costa, oblique, angled outwards below costa and inwards on vein 1; orbicular a small black spot; reniform diffused, blackish; a faint diffused medial shade before postmedial line, excurved from costa to vein 4, then incurved; postmedial line blackish with spot at costa, bent outwards below costa, then minutely dentate, excurved to vein 4, then incurved, defined on outer side by a paler shade; terminal area suffused with fuscous, darker at tornus with the faint pale subterminal line on it. Hind wing semihyaline whitish, the terminal half tinged with brown, a faint discoidal spot.

Hab. Canada, Br. Columbia, Revelstoke. *Exp.* 34 millim. This species is unknown to me; figured from a drawing from type in U.S. Nat. Mus.

*4098. Petilampa camina. (Plate CXXXIII. fig. 4.)

Platyperigea camina, Smith, Trans. Am. Ent. Soc. xxi. p. 60, pl. vi. f. 9 (1894); Dyar, Cat. Lep. N. Am. p. 109.

♂. Head and thorax black-brown slightly mixed with grey; tarsi blackish with pale rings; abdomen dark brown. Fore wing dark brown slightly irrorated with grey; subbasal line represented by a faint dark striga from costa; antemedial line indistinct, dark, oblique from costa to submedian fold; orbicular represented by a short black streak; reniform a narrow blackish lunule, strongly produced at upper extremity; postmedial line indistinct, diffused, strongly bent outwards below costa, then oblique, somewhat dentate and with slight whitish marks beyond it in the interspaces; subterminal line absent; a terminal series of faint dark lunules; cilia with slight pale lines at base and middle. Hind wing ochreous white, tinged with brown; a faint discoidal lunule; a fine brown terminal line and whitish line at base of cilia; the underside with the costal and terminal areas irrorated with brown, a brownish discoidal lunule.

Hab. U.S.A., Colorado (*Bruce*), type † ♂ in U.S. Nat. Mus. *Exp.* 36 millim.

Genus **AMEFRONTIA.**

Type.
Amefrontia, Hmpsn. Bull. Liverp. Mus. ii. 2. p. 37 (1899)..... *purpurea.*

Proboscis aborted, minute; palpi upturned, the 2nd joint reaching about to vertex of head and slender, the 3rd small; frons with large shovel-shaped corneous process at middle and corneous plate below it; eyes large, round; antennæ of male bipectinate to apex with rather long branches; thorax smoothly clothed with scales, the pro- and metathorax with slight spreading crests; tibiæ smoothly scaled; abdomen without crests. Fore wing with the apex rounded, the termen evenly curved and hardly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell to near middle.

This genus is called *Palafrontia* in Vol. vii. p. 6 and in the Phylogeny of the genera.

4099. Amefrontia purpurea.

Amefrontia purpurea, Hmpsn. Bull. Liverp. Mus. ii. 2. p. 37 (1899); id. Nat. Hist. Sokotra, p. 327, pl. xx. f. 11.

♂. Head and thorax deep fiery red; antennæ dark brown; legs brownish, the tarsi brown with pale rings; abdomen ochreous suffused with red-brown. Fore wing fiery red, the costal area, cell and terminal area except at tornus suffused with deep red-brown, the veins streaked with brown; traces of a straight erect antemedial line from cell to inner margin; orbicular and reniform very small with brown centres and ill-defined ochreous annuli, the former round, the latter figure-of-8-shaped; traces of a waved postmedial line excurved to vein 4, then oblique, some minute yellowish points beyond it on costa; a series of minute yellow points just

before the fine dark terminal line; cilia dark red-brown. Hind wing white, the inner area with some pale brown hair; cilia mixed with reddish, the underside with the costal area irrorated with red.

Fig. 110.—*Amefrontia purpurea*, ♂. ¾.

Hab. Sokotra, Hadibu Plain (*O.-Grant*), 1 ♂ type; Br. E. Africa, Taveta (*St. A. Rogers*), 1 ♂. *Exp.* 26 millim.

Genus **ETHIOPICA**, nov.

Type, *E. vinosa*.

Proboscis aborted, not functional; palpi upturned, the 2nd joint reaching about to middle of frons and moderately fringed with hair, the 3rd joint short; frons smooth; eyes large, rounded; thorax clothed chiefly with scales, the pro- and metathorax with spreading crests; tibiæ smoothly scaled; abdomen without crests. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male bipectinate with short branches.

A. Fore wing with the reniform filled in with whitish and defined by small white spots.
  a. Hind wing pure white.
    a^1. Fore wing purplish red ..... *vinosa*.
    b^1. Fore wing cupreous brown ..... *cupricolora*.
  b. Hind wing suffused with brown ..... *polyastra*.
B. Fore wing with the reniform defined by slight white points and not filled in with whitish ..... *hesperonota*.
C. Fore wing with the reniform represented by a black and white point ..... *micra*.

4100. **Ethiopica vinosa.**

Charidea vinosa, Hmpsn. Ann. S. Afr. Mus. ii. p. 292 (1902).

♂. Head and thorax purplish red, the scales slightly tipped

Fig. 111.—*Ethiopica vinosa*, ♂. ¾.

with white; tarsi ringed with whitish; abdomen white, the ventral

surface purplish red. Fore wing purplish red slightly irrorated with white; orbicular and reniform pale ochreous surrounded by white points, the former round, the latter lunulate; a double curved postmedial series of white points and a series just before termen. Hind wing white, the cilia tinged with pink at apex; the underside with the costal area suffused with pink, a fine pinkish terminal line.

Hab. Mashonaland, Salisbury (*Marshall*), 1 ♂ type; Transvaal, White R. (*Cooke*), 1 ♂. *Exp.* 28 millim.

4101. **Ethiopica cupricolora.** (Plate CXXXIII. fig. 5.)

Caradrina cupricolor, Hmpsn. Ann. S. Afr. Mus. ii. p. 299 (1902).

♂. Head and thorax purplish red, the scales slightly tipped with white, the vertex of head and antennæ whitish; pectus and legs rufous mixed with whitish, the tarsi slightly ringed with white; abdomen white tinged with rufous. Fore wing rufous with a cupreous tinge, the costal area tinged with purplish pink, the veins brownish, the interspaces of terminal area with slight whitish streaks; traces of a brown antemedial line, oblique from costa to submedian fold and angled inwards on vein 1; orbicular a small round white spot surrounded by four white points; reniform white surrounded by white points; an indistinct brown postmedial line excurved from costa to vein 4, then oblique; a terminal series of minute white points. Hind wing white, the veins of terminal area and termen faintly tinged with ochreous; the underside with the costal area tinged with purplish red.

Hab. Mozambique, Delagoa Bay (*Mrs. Monteiro*), 1 ♂ type. *Exp.* 22 millim.

4102. **Ethiopica polyastra**, n. sp. (Plate CXXXIII. fig. 6.)

Head and thorax cupreous brown slightly mixed with greyish; abdomen pale grey-brown. Fore wing cupreous brown; basal whitish points below costa and cell and subbasal points in and below cell with another beyond them in cell; traces of a waved antemedial line, angled inwards on vein 1 and with whitish points on costa, vein 1, and inner margin; orbicular a round yellowish white spot slightly defined by blackish and with rufous point in centre; reniform with the upper part rufous, the lower yellowish white defined by rufous, constricted at middle and surrounded by yellowish-white points except above; traces of a postmedial line with whitish point at costa, bent outwards below costa, then dentate and produced to whitish points on the veins, oblique below vein 4 and with some whitish points beyond it on costa; some subterminal whitish points between costa and vein 5 and a spot above tornus; a series of small white spots just before termen.

Hind wing greyish suffused with yellow-brown, the cilia rather paler; the underside greyish tinged and irrorated with brown.

Hab. S. Nigeria, Old Calabar (*Crompton*), 1 ♂ type; Congo State, Kambove Distr. (*Neave*), 1 ♀; Transvaal (*Pead*), 1 ♀. *Exp.* 24 millim.

4103. **Ethiopica hesperonota**, n. sp. (Plate CXXXIII. fig. 7.)

♀. Head and thorax deep purple, the scales slightly tipped with grey-white; palpi black-brown; pectus, legs, and abdomen greyish brown, the tarsi with slight whitish rings. Fore wing deep purple slightly irrorated with grey; subbasal line slight, greyish, waved, from costa to vein 1; antemedial line slight, grey, interrupted, waved, angled inwards on vein 1; orbicular and reniform defined by white points, small, the former rather oblique, elliptical; postmedial line indistinct, dark with series of grey points on it and more prominent spot at costa, bent outwards below costa, then dentate and produced to slight grey points on the veins, oblique below vein 4, some white points beyond it on costa; a slight waved interrupted whitish subterminal line; a series of white points just before termen; cilia fuscous brown. Hind wing whitish suffused with fuscous; a slight dark terminal line, the cilia rather paler at base; the underside white, the costal area and terminal area to submedian fold broadly suffused and irrorated with purple-brown.

Hab. Br. E. Africa, Taveta (*Rogers*), 1 ♀ type. *Exp.* 26 millim.

4104. **Ethiopica micra.** (Plate CXXXIII. fig. 8.)

Caradrina micra, Hmpsn. Ann. S. Afr. Mus. ii. p. 300 (1902).

Head, thorax, and abdomen ochreous brown mixed with some fuscous; the palpi, pectus, legs, and ventral surface of abdomen more strongly tinged with fuscous. Fore wing ochreous brown irrorated with fuscous; subbasal line represented by a slight dark striga from costa; antemedial line blackish, waved, angled inwards on vein 1 and outwards above inner margin; a black discoidal point usually with a white point on its outer edge; postmedial line blackish, bent outwards below costa, then dentate, angled inwards in discal fold and oblique below vein 4; some dark points on costa towards apex; subterminal line represented by a faint dark shade on its inner side, excurved below vein 7 and at middle, and bent outwards to tornus; a terminal series of black striæ. Hind wing pure white; the underside with the costal area suffused with ochreous brown.

Ab. 1. Head, thorax, and fore wing suffused with fuscous.

Hab. Abyssinia, Zegi Tsana (*Degen*), 1 ♂; Br. E. Africa, Nairowa (*Betton*), 1 ♂; Natal, Durban (*Bowker, Leigh*), 5 ♂, 3 ♀ type. *Exp.* 20–26 millim.

Sect. II. Antennæ of male serrate and fasciculate; proboscis rather stronger.

4105. **Ethiopica asteropa**, n. sp.

♂. Head and thorax dark brown tinged with purple and mixed with some white; palpi and legs black-brown, the tarsi ringed with white; abdomen yellowish brown. Fore wing deep purplish irrorated with greyish; subbasal line slight, whitish, from costa to submedian fold; antemedial line slight, whitish, waved; orbicular a small round white spot with yellowish centre defined by blackish; reniform with yellowish centre defined by blackish and surrounded by white points, constricted at middle; postmedial

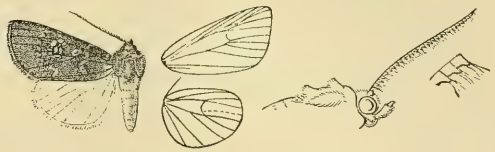


Fig. 112.—*Ethiopica asteropa*, ♂. $\frac{3}{2}$.

line indistinct, dark, slightly defined by white on outer side, bent outwards below costa, then dentate, incurved below vein 4, some white points beyond it on costa; traces of a subterminal series of whitish points. Hind wing pure white, the veins slightly tinged with brown towards termen; a fine dark terminal line; the underside with the costal area irrorated with brown, a small blackish discoidal spot.

Hab. Br. Centr. Africa, Likoma (*de Jersey*), 1 ♂ type. *Exp.* 24 millim.

Genus **PAROMPHALE**, nov.

Type, *P. cæca.*

Proboscis fully developed; palpi obliquely upturned, the 2nd joint reaching about to middle of frons and moderately scaled in front, the 3rd short; frons with small truncate conical prominence with raised edges and corneous plate below it; eyes large, rounded; antennæ of male ciliated; thorax clothed chiefly with scales, the prothorax without crest, the metathorax with decumbent crest; tibiæ moderately fringed with hair; abdomen without crests. Fore wing with the apex rounded, the termen evenly curved and hardly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 shortly stalked; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4106. **Paromphale cæca.**

Caradrina cæca, Swinh. A. M. N. H. (7) ix. p. 421 (1902).

♂. Head and thorax rufous slightly irrorated with fuscous; palpi at base, pectus and legs whitish, the tarsi black ringed with

white; abdomen pale greyish rufous. Fore wing rufous slightly irrorated with fuscous; subbasal line slight, double, blackish, from costa to submedian fold; antemedial line double, the inner line indistinct, the outer strong, black, waved, nearly erect; orbicular and reniform strongly defined by black, the former minute, round, the latter rather constricted at middle and open above; an indistinct sinuous medial line; postmedial line strong, black, strongly bent outwards below costa, then waved, excurved to vein 4, then incurved to lower edge of reniform; subterminal line slight, dark, with a

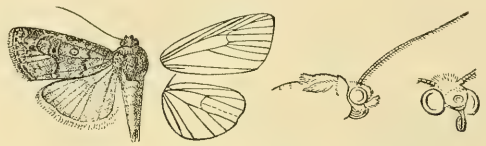


Fig. 113.—*Paromphale cæca*, ♂. $\frac{2}{1}$.

blackish shade before it on costa, excurved below vein 7 and at middle; a terminal punctiform black line. Hind wing pale reddish brown; cilia brownish white with a slight brown line through them; the underside paler with some brown irroration on costal area, an indistinct curved brown postmedial line from costa to vein 3.

♀. Much darker; fore wing with the medial area suffused with black, the antemedial line on inner side and the postmedial line on outer side defined by grey scales.

Hab. Queensland, Brisbane (*Turner*), 1 ♂, 1 ♀; W. Australia, Sherlock R. (*Clements*), 3 ♂, 2 ♀, Roebourne (*Clements*), 1 ♂, 1 ♀ type. *Exp.* 16–18 millim.

Genus **HYPOPERIGEA**, nov.

Type, *H. tonsa*.

Proboscis fully developed; palpi obliquely upturned, the 2nd joint reaching about to middle of frons and rather broadly scaled, the 3rd moderate; frons with small truncate conical prominence with slightly raised edges and corneous plate below it; eyes large, round; antennæ of male minutely serrate and ciliated, with a ridge of scales between them; thorax clothed chiefly with scales, the pro- and metathorax with spreading crests; tibiæ moderately fringed with hair; abdomen with dorsal crest at base only. Fore wing with the apex rounded, the termen evenly curved, crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with large white or pale patch at base.
  a. Fore wing with white or pale curved mark from middle of costa to apex ..... *albonotata*.
  b. Fore wing with obliquely placed white patches from middle of costa to apex ..... *leprosticta*.

B. Fore wing without white or pale basal patch.
a. Fore wing with the reniform filled in with red and defined by black ..... *turpis*.
b. Fore wing with the reniform whitish defined by white points ..... *tonsa*.
c. Fore wing with the reniform a black lunule defined by red ..... *hæmorrhanta*.

4107. Hypoperigea albonotota.

Tarache albonotata, Hmpsn. Ill. Het. B. M. ix. p. 96, pl. 162. f. 22 (1893); id. Moths Ind. ii. p. 312.
Tarache plumbicula, Hmpsn. J. Bomb. Nat. Hist. Soc. xvii. p. 475 (1906).

Head and thorax dark purplish brown mixed with grey; patagia white except at base and upper edge; pectus and legs white mixed with brown, the tarsi brown ringed with white; abdomen grey-white irrorated with dark brown. Fore wing dark purplish brown suffused with fuscous and slightly irrorated with grey; a large elliptical white patch slightly tinged with rufous on basal area in and below cell, another oblique patch from costa beyond antemedial line to lower angle of cell where it is met by a broad oblique fascia from apex forming a wide V-shaped mark; antemedial line black, oblique, waved, much interrupted; claviform with its upper edge slightly defined by black; orbicular and reniform obliterated by the white patches, a small brown spot at lower angle of cell; postmedial line interrupted at the white patch on which it is represented by a few dark scales, slightly bent outwards below costa, excurved to vein 4, then incurved and minutely dentate; subterminal line represented by a series of small dentate black marks with slight rufous marks on their outer edges and a white spot in submedian fold; a terminal series of small black lunules slightly defined by whitish on inner side. Hind wing whitish tinged with brown, especially on terminal area; cilia ochreous white with a slight brown line through them from apex to vein 2; the underside white, the costal and terminal areas irrorated with fuscous, a small discoidal spot, curved postmedial line with minute dark streaks on the veins, and terminal series of small lunules.

Ab. 1. *plumbicula*. Patagia, the oblique patch at base of fore wing and the V-shaped patch, except towards apex, suffused and irrorated with purplish brown.

Hab. Ceylon (*Green*), 1 ♀ type, Gampola (*Mackwood*), 1 ♀, Matale (*Pole*), 1 ♂ type *plumbicula*, Madulsima (*Vaughan*), 1 ♂. *Exp.* 26–32 millim.

4108. Hypoperigea leprosticta. (Plate CXXXIII. fig. 9.)

Euplexia leprosticta, Hmpsn. J. Bomb. Nat. Hist. Soc. xvii. p. 469 (1906).

Head and thorax pale and deep rufous, the frons with blackish lateral bars, the tegulæ with blackish line near tips, the patagia white except at base, the prothorax with white patches; pectus and legs whitish and rufous; tarsi blackish ringed with white;

abdomen rufous, the ventral surface whitish. Fore wing rufous slightly irrorated with fuscous; a large white patch on basal area, its upper edge bidentate, its outer edge curved; subbasal line represented by two dark striæ from costa; antemedial line double, waved, excurved below cell; claviform absent; orbicular represented by two obliquely placed white spots in cell with white patch above it on costa; reniform a rather rounded white patch almost conjoined to the lower orbicular spot; an indistinct waved medial line, oblique from costa to vein 2; postmedial line slightly bent outwards below costa, then dentate and produced to white points on the veins, excurved to vein 4, then oblique, a large round white patch beyond it just below costa conjoined to an elliptical apical spot; subterminal line represented by a series of whitish lunules and white point on costa, defined by a curved dentate dark line on inner side, with white spot beyond it in submedian interspace; a fine waved black terminal line; cilia brown, pale rufous at base. Hind wing whitish suffused with brown, the terminal area rather darker; cilia whitish with a slight brown line near base; the underside white tinged and irrorated with brown, a small discoidal spot and curved postmedial line.

Ab. 1. Fore wing with the orbicular spot confluent with the costal patch which is also confluent with the reniform patch, a small elongate white mark beyond upper angle of cell.—Java.

Hab. Ceylon (*J. Pole*), 1 ♀ type; Singapore (*Ridley*), 1 ♂; W. Java (*Buitens*), 1 ♀. *Exp.* 36–46 millim.

4109. **Hypoperigea turpis.** (Plate CXXXIII. fig. 10.)

Acontia turpis, Wlk. xii. 794 (1857); Hmpsn. Moths Ind. ii. p. 252.
Caradrina discophora, Hmpsn. J. Bomb. Nat. Hist. Soc. xiv. p. 204 (1902).

Head and thorax whitish mixed with rufous; palpi banded with fuscous; frons with lateral black bars; tarsi fuscous with pale rings; abdomen white suffused with ochreous. Fore wing whitish tinged with brown and irrorated with fuscous, some orange-red on basal costal area and fasciæ in submedian fold and medial part of discal fold; subbasal line indistinct, double, waved, from costa to submedian fold; antemedial line double, the inner line indistinct, oblique, waved, with whitish points before it in cell and on vein 1; claviform small, orange-red, defined by blackish; orbicular and reniform with orange-red centres and whitish annuli defined by blackish, both constricted at middle; traces of a sinuous medial line; postmedial line double, bent outwards below costa, then minutely waved and with black and white points beyond it on the veins, slightly incurved at discal fold and oblique below vein 4, some white points beyond it on costa; subterminal line white, slightly defined by blackish on inner side, minutely waved, excurved below vein 7 and at middle, the area beyond it tinged with red; a terminal series of minute black lunules; cilia brown, the tips whitish with series of fuscous points. Hind wing pure white in male, the terminal area tinged with fuscous in female; the

underside with the costal area tinged with ochreous and irrorated with fuscous, a terminal series of black points from apex to vein 2.

Hab. N. India, 1 ♀ type; Madras, Cuddapah (*Campbell*), 2 ♂, 1 ♀ type *discophora*, Gooty (*Campbell*), 3 ♀. *Exp.* 24 millim.

4110. Hypoperigea tonsa.

Perigea tonsa, Guen. Noct. i. p. 232 (1852).
Prometopus rubrispersa, Turner, Tr. R. Soc. S. Austr. xxviii. p. 214 (1904).

Head and thorax ferruginous mixed with whitish and black scales; abdomen ochreous; pectus, legs, and ventral surface of abdomen irrorated with white. Fore wing ferruginous irrorated with fuscous, especially on costal half of medial area; an indistinct double waved black subbasal line from costa to submedian fold; a highly waved and rather indistinct antemedial line defined by whitish on inner side; claviform represented by a few black scales; orbicular and reniform small, whitish defined by blackish and their centres by brown, the former round; postmedial line indistinct, minutely dentate, defined by whitish on outer side, bent

Fig. 114.—*Hypoperigea tonsa*, ♂. ½.

outwards below costa, excurved to vein 4, then incurved; subterminal line indistinct, waved, angled outwards at vein 7 and excurved at middle; some pale points on apical part of costa; a fine waved dark terminal line. Hind wing whitish suffused with reddish brown; the underside white, the costal area irrorated with brown, the apical half of terminal area suffused with brown.

Ab. 1. Head, thorax, and fore wing without any red scales.

Hab. Queensland, Brisbane (*Turner*), 2 ♂, 1 ♀; W. Australia, Albany (*Shortbridge*), 1 ♀, Geralton (*Saunders*), 1 ♂, Derby (*Lower*), 2 ♀; N. S. Wales (*Raynor*), 9 ♀; Victoria, Melbourne (*Lucas*), 1 ♀, Gisborne (*Lyell*), 2 ♂. *Exp.* 30–36 millim.

*4111. Hypoperigea hæmorrhanta. (Plate CXXXIII. fig. 11.)

Hypoperigea hæmorrhanta, Turner, ined.

♂. Head and thorax black-brown mixed with fiery red; tarsi black ringed with ochreous; abdomen red-brown mixed with ochreous. Fore wing greyish, almost wholly suffused and irrorated with black-brown; a diffused fiery red fascia in submedian fold,

the interspaces of terminal area streaked with fiery red; subbasal line represented by a slight black spot on costa; antemedial line indistinct, minutely dentate, angled outwards in submedian fold; claviform absent; orbicular a black point; reniform represented by fiery red marks before and beyond the black discoidal line; a sinuous black line from lower angle of cell to inner margin; postmedial line very indistinct, bent outwards below costa, then minutely waved, excurved to vein 4, then incurved; an indistinct dentate subterminal dark line angled outwards below veins 7 and 4; a fine waved black terminal line; cilia fiery red mixed with blackish. Hind wing uniform reddish brown; cilia reddish at base; the underside greyish irrorated with brown, a slight discoidal spot and terminal series of lunules.

Hab. Queensland, Adayale, type† ♂ in Coll. Turner. *Exp.* 30 millim.

Genus **DYSMILICHIA.**

	Type.
Phalacra, Staud. Rom. Mém. vi. p. 568 (1892), nec Wlk. Lep. 1866	*gemella.*
Milichia, Snell. Tijd. v. Ent. xli. p. 194 (1898), nec Mieg. Dipt. 1830	*gemella.*
Dysmilichia, Speiser, Berl. ent. Zeit. xlvii. p. 140 (1902)	*gemella.*

Proboscis fully developed; palpi oblique, short, fringed with hair in front; frons with truncate conical prominence with raised edges and corneous plate below it; eyes large, rounded; antennæ of male typically ciliated; build slender; thorax clothed chiefly with scales and without crests; tibiæ moderately fringed with hair; abdomen without crests. Fore wing short and broad, the apex rounded, the termen evenly curved and non-crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male serrate.

*4112. Dysmilichia rufalis.

Protagrotis rufalis, Beth.-Baker, Nov. Zool. xiii. p. 191 (1906).

♂. Head and thorax fiery red mixed with some brown; vertex of thorax brown; palpi with some brown at side of 2nd joint; hinder part of pectus and mid and hind legs mostly whitish; abdomen whitish tinged with rufous, especially towards base of dorsum. Fore wing orange-red irrorated with fiery red to postmedial line, some brown on inner margin except at base, the terminal area brown with a greyish tinge and slightly irrorated with fiery red; subbasal line brown, extending to inner margin and bent outwards at vein 1; antemedial line double filled in with orange, slightly incurved in cell, then excurved; claviform absent; orbicular orange-red defined by black, small, round; reniform orange-red defined by black on inner side, faintly defined on outer

and with slight red line in centre; a black medial shade, rather oblique below the cell; postmedial line double filled in with orange, minutely waved, oblique from costa to vein 4, then incurved; subterminal line represented by a series of slight red marks defined on inner side by small brown marks, excurved below

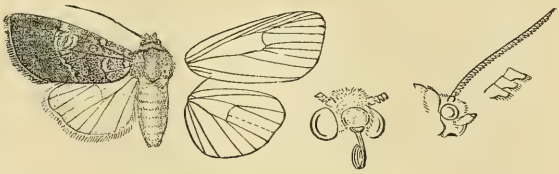


Fig. 115.—*Dysmilichia rufalis*, ♂. ½.

vein 7; cilia fuscous brown, grey-white at base. Hind wing white, the veins and terminal area tinged with pale rufous; the underside with the costa and terminal area tinged with pale rufous.

Hab. Br. N. Guinea, Ekeikei (*Pratt*), type † ♂ in Coll. Bethune-Baker. *Exp.* 40 millim.

Sect. II. Antennæ of male ciliated.

A. Fore wing with the postmedial line defined on each side by series of white spots.
  a. Fore wing with diffused white patch on costal area beyond postmedial line ..... *gemella.*
  b. Fore wing without diffused white patch on costal area beyond postmedial line..... *calamistrata.*
B. Fore wing with the postmedial line not defined on each side by series of white spots ..... *perigeta.*

4113. Dysmilichia gemella.

Perigea gemella, Leech, P. Z. S. 1889, p. 492, pl. 53. f. 12; Staud. Cat. Lep. pal. p. 232.

Head and thorax pale yellow mixed with rufous, the palpi, head, tips of patagia, and metathoracic crest largely mixed with black-brown scales; tibiæ mixed with dark brown, the tarsi blackish

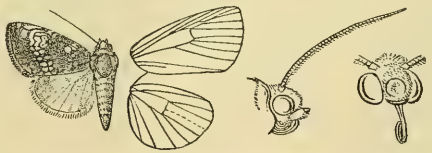


Fig. 116.—*Dysmilichia gemella*, ♂. ½.

with pale rings; abdomen pale yellow irrorated with brown. Fore wing deep rufous, the extreme base yellowish; subbasal line represented by three obliquely placed yellow points; antemedial

line represented by an irregular yellow striga from costa, and an oblique series of four small white spots to inner margin; claviform absent; orbicular pure white defined by black, round; reniform white defined by black, irrorated with brown and with curved brown line in centre, somewhat constricted at middle; postmedial line fine, rufous, traversing a series of rather elongate white spots defined by blackish, bent outwards below costa, slightly incurved at discal fold and strongly below vein 4, some white points beyond it on costa, a whitish patch below costa and another on inner area towards tornus; subterminal line dark with whitish striga from costa and another from inner margin, angled outwards at vein 7 and excurved at middle; a terminal series of black striæ; cilia with a slight dark line through them. Hind wing yellowish white suffused and irrorated with red-brown, the terminal area rather darker; a fine dark terminal line; cilia yellowish tinged with rufous; the underside white irroroted with rufous, a brown discoidal spot and sinuous postmedial line.

Hab. E. Siberia, Kentei, Ussuri; Japan, Yokohama (*Pryer*), 1 ♂, 3 ♀ type; Corea (*Ito*), 2 ♂, 1 ♀. *Exp.* 24–28 millim.

4114. **Dysmilichia calamistrata.** (Plate CXXXIII. fig. 12.)

Ilattia calamistrata, Moore, P. Z. S. 1881, p. 348; Hmpsn. Moths Ind. ii. p. 251.

♀. Head and thorax rufous mixed with whitish; tarsi ringed with whitish; abdomen whitish suffused with rufous. Fore wing deep rufous; a white point at base; subbasal line represented by a white point below costa; antemedial line represented by a white striga angled outwards below costa and white points on median nervure and vein 1; claviform absent; orbicular round, white, defined by black; reniform figure-of-8-shaped, with white annulus defined by black interrupted at middle; postmedial line fine, rufous, traversing a series of small elongate white spots defined by rufous, bent outwards below costa, then minutely waved, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line represented by white striæ from costa and inner margin, hardly traceable between those points, excurved below vein 7 and at middle; a terminal series of dark striæ; cilia with a slight dark line through them. Hind wing whitish suffused with red-brown; the cilia white with brown line near base and brown spots at tips; the underside whitish thickly irrorated with red-brown, a slight discoidal spot and a curved diffused brown postmedial line.

Hab. Sikhim, 1 ♀ type; Assam (*Badgley*), 1 ♀, Khásis, 1 ♀. *Exp.* 26–30 millim.

4115. **Dysmilichia perigeta.** (Plate CXXXIII. fig. 13.)

Photedes perigeta, Schaus, Trans. Am. Ent. Soc. xxx. p. 157 (1904).

Head and thorax purplish rufous mixed with greyish; palpi

blackish at sides with grey rings at extremities of the joints; frons with lateral black bars; tarsi fuscous ringed with white; abdomen pale grey-brown. Fore wing purplish rufous; a small white spot at base; subbasal line represented by a whitish striga from costa and point in cell; antemedial line indistinct, dark, defined on inner side by whitish striæ at costa and inner margin and slight marks in and below cell, oblique, waved, strongly excurved above inner margin; orbicular small, round, with white annulus defined by black; reniform with yellowish mark in centre and white points representing upper and lower parts of annulus, defined by black and constricted at middle; postmedial line indistinct, defined on outer side by some whitish scales, and with white striæ at costa and inner margin, strongly bent outwards below costa, excurved to vein 4, then oblique, and with whitish point beyond it on vein 1, some white points beyond it on costa; subterminal line white, interrupted in parts and slightly defined by brown suffusion on inner side, angled outwards at vein 7, excurved at middle and bent outwards to tornus; a terminal series of black points with white points between them at base of cilia. Hind wing grey-brown with a reddish tinge; cilia pale rufous at base, whitish at tips; the underside greyish, the costal area suffused with rufous, a faint discoidal point and curved postmedial line.

Hab. Brazil, São Paulo (*D. Jones*), 5 ♂, 1 ♀. *Exp.* 22 millim.

Sect. III. Antennæ of male laminate.

4116. Dysmilichia bicyclica.

Erastria bicyclica, Staud, Stett. ent. Zeit. 1888, p. 46; id. Cat. Lep. pal. p. 231.

♂. Head and thorax pale brown mixed with grey-white; palpi whitish with brown bands on 2nd and 3rd joints; pectus and legs whitish, the tibiæ and tarsi brown ringed with white; abdomen ochreous white irrorated with brown. Fore wing dull brown

Fig. 117.—*Dysmilichia bicyclica*, ♂. $\frac{3}{2}$.

irrorated with white, more thickly on basal and costal areas; traces of a white subbasal line from costa to submedian fold; antemedial line brown defined by white on inner side, angled outwards below costa, then waved; orbicular and reniform with white annuli defined by brown, the former small, round, the latter figure-of-8-shaped; postmedial line brown defined by white on

outer side, oblique from costa to vein 6, then dentate, at vein 3 bent inwards to lower angle of cell; subterminal line formed of white scales and indistinct except at costa and inner margin, irregularly waved, angled outwards at vein 7 and excurved at middle; a terminal series of faint dark spots; cilia brown at base, whitish at tips. Hind wing pale reddish brown with fine dark terminal line; cilia brown at base, white at tips; the underside white slightly irrorated with brown.

Hab. E. Turkestan, Ili, Kuldja, 1 ♂. *Exp.* 24 millim.

Genus **PROXENUS.**

	Type.
Proxenus, Herr.-Schäff. Eur. Schmett. ii. p. 240 (1845)	*hospes.*
Radinoyoes, Butl. Trans. Ent. Soc. 1886, p. 393	*tenuis.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and moderately scaled, the 3rd short; frons smooth; eyes large, round; antennæ of male ciliated; thorax clothed chiefly with scales and without crests; build slender; tibiæ moderately fringed with hair; abdomen without crests. Fore wing long and narrow, the apex rounded, the termen evenly curved and hardly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell or shortly stalked; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle or shortly stalked; 8 anastomosing with the cell near base only.

Sect. I. (*Proxenus*). Mid and hind tibiæ of male with fringes of yellowish hair on outer side, abdomen with lateral fringes of yellowish hair on basal segments.

A. Fore wing tinged with rufous.
  a. Fore wing with the veins irrorated with fuscous and grey ..... *hospes.*
  b. Fore wing almost wholly suffused with fuscous and grey ..... *xantholopha.*
B. Fore wing not tinged with rufous ..... *dissimilis.*

4117. **Proxenus hospes.**

Caradrina hospes, Frr. Neue Schmett. i. p. 40, pl. 21. f. 4 (1831); Herr.-Schäff. Schmett. Eur., Noct. f. 366; Rmbr. Cat. Lep. And. pl. 15. f. 4; Mill. Icones, iii. pl. 135. ff. 9–10; id. Mém. Soc. Cannes, 1879, p. 128, pl. 7. ff. 4–5; Staud. Cat. Lep. pal. p. 198.
Caradrina uliginosa, Herr.-Schäff. Eur. Schmett., Noct. f. 367 (nec Boisd.).
Caradrina lepigone, Roesel, Stett. ent. Zeit. 1877, p. 364 (nec Möschl.).

♂. Head and thorax pale rufous with a greyish tinge; palpi black at sides, whitish in front and at tips; mid and hind tibiæ fringed with ochreous-white hair; abdomen ochreous white tinged with brown, the basal segments with lateral fringes of ochreous white hair. Fore wing glossy ochreous suffused with rufous, the veins irrorated with fuscous and grey; antemedial line very indistinct, waved, angled inwards to blackish points on the veins; orbicular a blackish point; reniform a small lunule slightly defined by brown with an ochreous streak from it to near termen above vein 5; traces of a dentate postmedial line with black and pale

points on the veins, bent outwards below costa and oblique below vein 4; the veins of terminal area with slight pale streaks; a terminal series of black points. Hind wing white, the apical area

Fig. 118.—*Proxenus hospes*, ♂. ½.

slightly tinged with brownish ochreous; the underside with the apical half of costal area irrorated with brown.

Hab. S.W. France, Leech Coll.; Spain; Italy; Sicily; Dalmatia. *Exp.* 30 millim.

Larva. Hffm. Raup. p. 298.

Greyish yellow, the ventral surface whitish; dorsal line whitish; subdorsal and stigmatal lines red-brown; stigmata yellowish with dark rings; head brown. Food-plants: *Plantago* and low-growing herbs. 6–8.

4118. **Proxenus xantholopha.** (Plate CXXXIII. fig. 14.)

Caradrina xantholopha, Hmpsn. Ann. S. Afr. Mus. ii. p. 305 (1902).

Head and thorax fuscous brown tinged with reddish and mixed with grey; palpi black at sides, whitish in front and at tips; mid and hind tibiæ of male fringed with whitish hair; abdomen whitish suffused with brown, the basal segments in male with lateral fringes of white hair and the genital tufts yellowish white. Fore wing reddish brown suffused with fuscous and mixed with grey; traces of a waved dark antemedial line bent inwards to costa; orbicular a black point; reniform a small lunule slightly defined by blackish; traces of a blackish postmedial line bent outwards below costa, then dentate and produced to black points on the veins, oblique below vein 4, the veins beyond it with dark streaks; traces of a subterminal line excurved below vein 7 and at middle; a terminal series of black points with some pale scales between them. Hind wing white, the apical area tinged with fuscous; cilia tinged with fuscous towards apex; the underside with the costal area irrorated with brown.

Hab. Transvaal, White R. (*Cooke*), 1 ♂; Natal, Estcourt (*Hutchinson*), 1 ♀; C. Colony, Transkei (*Miss F. Barrett*), 1 ♂, 1 ♀ type. *Exp.* 30–34 millim.

4119. **Proxenus dissimilis.** (Plate CXXXIII. fig. 15.)

Caradrina dissimilis, South, ined.

Head and thorax brown mixed with grey; palpi black at sides,

whitish in front and at tips; mid and hind tibiæ of male fringed with whitish hair; abdomen grey suffused with brown, the basal segments of male with lateral fringes of white hair, the genital tufts whitish. Fore wing glossy brown irrorated with grey and dark brown; traces of a double waved antemedial line; orbicular a dark point; reniform a small lunule slightly defined by brown; postmedial line indistinct, double, bent outwards below costa, then waved, incurved at discal fold and below vein 4, the veins beyond it with dark streaks to the subterminal line, which is greyish defined by fuscous on inner side, angled outwards at vein 7 and excurved at middle; a terminal series of black points with whitish points between them. Hind wing white, the apical area and termen to vein 2 tinged with brown; cilia brown towards apex with a fine white line at base; the underside with the costal area irrorated with brown except at base, a slight discoidal point.

Hab. Japan, Yoshino, type † in Coll. Wileman; Sikhim, 1800′ (*Dudgeon*), 1 ♂; S. Borneo, 1 ♀; Philippines, Luzon, Irisan (*McGregor*), 6 ♂, 2 ♀. *Exp.* 24–30 millim.

Sect. II. (*Radinogoes*). Mid and hind tibiæ and abdomen of male normal.

A. Fore wing with yellow centres to orbicular and reniform... *xanthopis.*
B. Fore wing with white centres to orbicular and reniform ... *fragosa.*
C. Fore wing without yellow or white centres to orbicular and reniform.
  a. Fore wing with the reniform defined on both sides by white points.
    a^1. Fore wing with the orbicular a small dark spot defined by whitish, a series of white points before the terminal black points ..... *distracta.*
    b^1. Fore wing with the orbicular a black point, no series of white points before the terminal black points ..... *tenuis.*
  b. Fore wing with whitish point on outer edge only of reniform.
    a^1. Fore wing grey-brown ..... *lepigone.*
    b^1. Fore wing black ..... *nitens.*
  c. Fore wing without whitish point on outer edge of reniform.
    a^1. Fore wing without grey streaks in the interspaces.
      a^2. Fore wing glossy blackish ..... *miranda.*
      b^2. Fore wing pale glossy rufous ..... *hennia.*
      c^2. Fore wing pale brownish grey.
        a^3. Fore wing with the reniform a small oblong spot ..... *insipida.*
        b^3. Fore wing with the reniform hardly traceable ... *cinerea.*
    b^1. Fore wing with grey streaks in the interspaces..... *tristis.*

4120. **Proxenus xanthopis**, n. sp. (Plate CXXXIII. fig. 16.)

♀. Head and thorax fuscous brown tinged with grey, the vertex of head and tegulæ at middle black-brown; abdomen grey suffused with brown. Fore wing fuscous brown suffused with grey, the terminal area somewhat darker; antemedial line black, excurved in submedian interspace; orbicular a yellow point defined by black;

reniform a yellow point with slight black lunule on its inner side; postmedial line black, with small spot at costa, strongly bent outwards below costa, then dentate, angled inwards at discal fold and very oblique below vein 4, some white points beyond it on costa; traces of a minutely waved greyish subterminal line slightly defined by fuscous on inner side, incurved below vein 3; a terminal series of black points. Hind wing white faintly tinged with brown especially on the veins; the underside with the costal area thickly irrorated with brown, a slight discoidal lunule, traces of a postmedial line from costa to vein 4, and a terminal series of slight lunules.

Hab. Basutoland, Machacha, 10,000′ (*Crawshay*), 1 ♀ type. *Exp.* 30 millim.

*4121. **Proxenus fragosa.** (Plate CXXXIII. fig. 17.)

Caradrina fragosa, Grote, Papilio, iii. p. 76 (1883); Smith, Cat. Noct. N. Am. p. 196.

Head, thorax, and abdomen brown mixed with grey; palpi with the 2nd joint blackish at sides; frons pale. Fore wing ochreous brown irrorated with fuscous, the terminal area suffused with fuscous; antemedial, medial, and postmedial lines represented by indistinct dark marks on costa, the first just traceable as a faint shade, the last very indistinct, interrupted, and dentate; orbicular and reniform represented by white points. Hind wing whitish tinged with fuscous, the cilia white.

Hab. U.S.A., Arizona. *Exp.* 30 millim. This species is unknown to me; figured from a drawing from type in Mus. Brooklyn Soc. Arts & Sciences.

4122. **Proxenus distracta.** (Plate CXXXIII. fig. 18.)

Caradrina distracta, Ev. Bull. Mosc. 1848, iii. p. 217 & 1855, iv. p. 330, & 1856, ii. pl. 1. f. 1; Staud. Cat. Lep. pal. p. 189.

♂. Head and thorax white mixed with reddish brown; palpi irrorated with fuscous; tarsi fuscous ringed with white; abdomen whitish suffused with brown. Fore wing whitish thickly irrorated with reddish brown; subbasal line represented by black points on costa and in cell; antemedial line brown, minutely waved, oblique, angled inwards on vein 1; orbicular indistinct, brown defined by whitish, round; reniform indistinct, brown defined by whitish points, constricted at middle; an oblique medial brown striga from costa; postmedial line brownish defined by whitish on outer side, with black point at costa and dark points on the veins, slightly bent outwards below costa, then dentate, oblique below vein 4, some whitish points beyond it on costa; subterminal line whitish defined on inner side by brown suffusion, angled outwards at vein 7 and excurved at middle; a terminal series of black points defined on inner side by small white lunules; cilia with a slight dark line

near base. Hind wing white slightly tinged with ochreous; a faint oblique discoidal striga and terminal series of dark striæ from apex to submedian fold; the underside white irrorated with brown, a dark discoidal lunule.

Hab. Russia, Urals; Mongolia, Uliassutai, 1 ♂; E. Siberia, Dahuria, Amurland. *Exp.* 30 millim.

4123. Proxenus tenuis. (Plate CXXXIII. fig. 19.)

Radinogoes tenuis, Butl. Trans. Ent. Soc. 1886, p. 394, pl. ix. f. 8.

Head and thorax pale rufous mixed with some fuscous and grey; palpi black at sides, whitish in front and at tips; antennæ ringed black and white towards base; tarsi fuscous ringed with white; abdomen greyish tinged with rufous. Fore wing pale glossy rufous irrorated with fuscous especially on costal and terminal areas; subbasal line blackish, curved, from costa to median nervure; antemedial line blackish, oblique, waved, angled inwards on vein 1; orbicular a black point; reniform a black point with two white points on inner side and one beyond it; postmedial line blackish, bent outwards below costa, then dentate and produced to whitish points on the veins, oblique below vein 4; traces of a pale subterminal line faintly defined by brown on inner side, excurved below vein 7 and at middle; a terminal series of black points. Hind wing white, the veins and apical area faintly tinged with ochreous brown; a fine brown terminal line; the underside with the costal area irrorated with brown.

Hab. Queensland, Rockhampton, 1 ♂, Peak Downs, 1 ♀ type, Brisbane (*Turner*), 1 ♂; W. Australia, Geralton (*Saunders*), 1 ♂, Sherlock R. (*Clements*), 1 ♂, 1 ♀; N. S. Wales (*Raynor*), 1 ♂, 2 ♀; Victoria, Birchip (*Lyell*), 1 ♂. *Exp.* 22–28 millim.

4124. Proxenus lepigone.

Hydrilla lepigone, Möschl. Wien. ent. Mon. 1860, p. 273; Herr.-Schäff. Neue Schmett. p. 25, f. 123; Staud. Cat. Lep. pal. p. 198.

Head and thorax dark glossy brown; palpi black-brown, greyish at tips; abdomen greyish brown. Fore wing glossy grey-brown

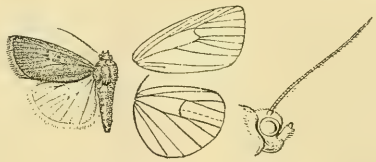


Fig. 119.—*Proxenus lepigone.* ½.

irrorated and suffused with reddish brown, the veins with slight dark streaks; traces of a dark antemedial line, bent inwards to

costa and incurved below submedian fold ; orbicular represented by a black point, the reniform by a slight dark spot with whitish point on its outer edge ; traces of a dark postmedial line bent outwards below costa, then waved, oblique below vein 4. Hind wing white faintly tinged with brown especially on the veins and apical area ; the underside with the costal area irrorated with brown, a faint discoidal lunule.

Hab. Hungary ; S. Russia, Sarepta (*Christoph*), Zeller, Frey, and D'Emmick Colls. *Exp.* 24–32 millim.

4125. **Proxenus nitens.** (Plate CXXXIII. fig. 20.)

Caradrina nitens, Dyar, Can. Ent. xxxvi. p. 30 (1904).

♂. Head and thorax glossy fuscous brown slightly tinged with grey ; abdomen grey suffused with fuscous brown. Fore wing glossy black slightly irrorated with grey ; traces of a dark antemedial line bent inwards to costa and inner margin ; orbicular absent ; reniform a minute white lunule ; faint traces of a dark postmedial line, bent outwards below costa and oblique below vein 4. Hind wing white, the costal area and termen to vein 2 tinged with fuscous ; cilia tinged with fuscous except towards tornus ; the underside with the costal area thickly irrorated with fuscous, the terminal area slightly irrorated with brown to vein 2.

Hab. Canada, Alberta, Calgary (*Wolley-Dod*), 3 ♂, Br. Columbia, Kaslo ; U.S.A., N. Dakota, Turtle Mts. *Exp.* 34 millim.

4126. **Proxenus miranda.** (Plate CXXXIII. fig. 21.)

Caradrina miranda, Grote, Bull. Buff. Soc. Nat. Sci. i. pp. 11, 169 (1873) ; Smith, Cat. Noct. N. Am. p. 195 ; Staud. Cat. Lep. pal. p. 198.

Head and thorax dark glossy brown mixed with grey ; abdomen grey suffused with brown. Fore wing glossy black-brown slightly irrorated with grey ; faint traces of a waved whitish antemedial line ; orbicular and reniform represented by faint dark points ; the postmedial line represented by a faint series of minute dark points on the veins. Hind wing white, the veins, costal area and termen to vein 2 tinged with brown ; cilia tinged with brown from apex to vein 2 and with a fine pale line at base ; the underside with the costal area irrorated and suffused with brown.

Hab. U.S.A., New York, Evans Center, 1 ♂, 5 ♀, Washington, 1 ♀, Colorado, Utah, California. *Exp.* ♂ 32, ♀ 24–26 millim.

Larva. Head pale brown, reticulate with darker brown. Body robust, the feet of joints 7 and 8 smaller ; obscure yellowish brown, the substigmatal line broad, pale ; dorsum broadly pale yellowish, containing a darker band that widens angularly on the segments ; cervical shield concolorous.—H. G. D.

4127. Proxenus hennia. (Plate CXXXIII. fig. 22.)

Caradrina hennia, Swinh. A. M. N. H. (7) vii. p. 495 (1901).

♀. Head and thorax pale rufous; abdomen whitish tinged with rufous. Fore wing pale glossy rufous with slight dark irroration; faint traces of a dark antemedial line bent inwards to costa; orbicular and reniform absent; postmedial line very indistinct, dark, bent outwards below costa and oblique below vein 4; subterminal line defined by brown suffusion on inner side, slightly angled outwards at vein 7 and incurved at submedian fold; a terminal series of black points. Hind wing white, the terminal area slightly tinged with ochreous from apex to vein 2; the underside with the costal area tinged with ochreous and slightly irrorated with brown.

Hab. Borneo, Sarawak, 2 ♀ type, S.E. Borneo (*Doherty*), 2 ♀. *Exp.* 20–24 millim.

*4128. ? Proxenus insipida.

Caradrina insipida, Streck. Lep. Rhop. & Het., Suppl. 3. p. 32 (1900); Dyar, Cat. Lep. N. Am. p. 110.

Head and thorax pale glossy grey tinged with brown; abdomen greyish white. Fore wing pale glossy grey tinged with brown, rather darker towards termen; a somewhat oblong fuscous discoidal spot; faint traces of a subterminal line. Hind wing greyish white.

Ab. 1. Head, thorax, and fore wing redder brown, the last with the costa to end of cell and the median nervure tinged with ash-grey.

Hab. U.S.A., Wisconsin. *Exp.* 21 millim. This species is unknown to me.

*4129. Proxenus cinerea.

Hydrilla cinerea, Alph. Rom. Mém. v. p. 168, pl. 8. f. 3 (1889); Staud. Cat. Lep. pal. p. 198.

♂. Head, thorax, and abdomen pale brownish grey. Fore wing pale brownish grey irrorated with whitish; antemedial line sometimes traceable; orbicular and reniform hardly traceable; postmedial line dark defined on outer side by whitish, bent outwards below costa, then oblique, with slight dark streaks beyond it on the veins; faint traces of a sinuous subterminal line; a terminal series of dark points; a fine pale line at base of cilia. Hind wing white, the veins and termen tinged with brown.

Hab. W. Turkestan, Taschkent, Kondara; E. Turkestan, Ili. *Exp.* 30–32 millim. This species is unknown to me.

4130. Proxenus tristis. (Plate CXXXIII. fig. 23.)

Caradrina tristis, Brem. Lep. Ost-Sib. p. 49, pl. 5. f. 9 (1864); Staud. Cat. Lep. pal. p. 198.
Hydrilla lugens, Staud. Rom. Mém. vi. p. 490 (1892).

Head and thorax whitish suffused with pale brown; palpi fuscous, whitish at tips; tarsi with slight whitish rings; abdomen whitish tinged with brown. Fore wing ochreous white suffused and irrorated with brown, the costal area whiter; subbasal line absent; faint traces of a waved antemedial line; orbicular represented by a small elongate black spot in cell, the reniform by minute black lunules on inner and outer sides; postmedial line very indistinct, bent outwards below costa, then dentate, incurved below vein 4; subterminal line absent; a terminal series of faint dark points. Hind wing white, the veins tinged with brown; a fine brown terminal line; the underside with the costal area irrorated with brown.

Ab. 1. *lugens*. Darker.

Hab. E. Siberia, Amurland, 1 ♀, Ussuri; Kashmir, Goorais Valley (*Leech*), 1 ♂, Nubra (*McArthur*), 1 ♀. *Exp.* ♂ 30, ♀ 28 millim.

Genus MESOTROSTA.

	Type.
Mesotrosta, Led. Noct. Eur. p. 190 (1857)	*signalis*.

Proboscis fully developed; palpi obliquely upturned, the 2nd joint reaching to about middle of frons and moderately scaled, the 3rd short; frons with rounded prominence; eyes small, elliptical; antennæ of male ciliated; thorax smoothly clothed almost entirely with scales and without crests; tibiæ moderately fringed with hair; abdomen without crests. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4131. Mesotrosta signalis.

Scopula signalis, Treit. Schmett. Eur. vii. p. 70 (1829), & x. 2, p. 149; Fr. Neue Beitr. iv. p. 124, pl. 360. f. 5; Dup. Lép. Fr., Suppl. iv. p. 529, pl. 90. f. 7; Herr.-Schäff. Eur. Schmett., Noct. ff. 176, 177; Staud. Cat. Lep. pal. p. 233.

Head and thorax dark brown mixed with some grey; abdomen grey thickly irrorated with brown. Fore wing brown thickly irrorated with grey, the veins, discal and submedian folds faintly streaked with red; antemedial line obsolete on costal half, then indistinct, dark, defined by greyish on inner side, sinuous and somewhat oblique; orbicular yellow defined by red, small, round; reniform pure white defined by brown, narrow above, constricted at middle and expanding below; postmedial line faintly defined by

whitish on outer side, bent outwards below costa, incurved at discal fold, incurved and minutely dentate below vein 4, some white points beyond it on costa; subterminal line with small yellowish spot at costa, then very indistinct and slightly excurved below vein 7 and at middle; a terminal series of slight pale striæ; cilia

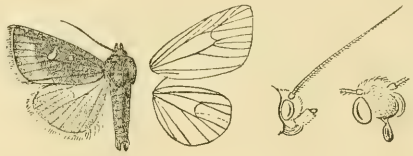


Fig. 120.—*Mesotrosta signalis*, ♂. ⅔.

with a dark line at middle and whitish tips. Hind wing greyish suffused and irrorated with brown; a fine dark terminal line; cilia with a brown line near base and whitish tips; the underside whitish irrorated with brown; a small brown discoidal spot and indistinct curved minutely waved postmedial line.

Hab. Austria, Zeller Coll.; Hungary, Zeller, Frey, and Leech Colls.; Russia, Ural Mts. *Exp.* 20–24 millim.

Larva. Hffm. Raup. p. 143.

Head brown; dorsal area flesh-colour with yellowish intersegmental rings; dorsal line dark; sides yellow; ventral surface whitish; warts brown; thoracic shield yellowish; all the prolegs fully developed.

Genus **HÆMASSIA**, nov.

Type, *H. renalis*.

Proboscis aborted, minute; palpi obliquely porrect, extending about the length of head and moderately scaled; frons with large rounded prominence; eyes large, round; antennæ of male bipectinate with moderate branches to apex, of female with shorter branches; thorax clothed chiefly with scales, the pro- and metathorax with spreading crests; tibiæ moderately fringed with hair; abdomen without crests. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4132. Hæmassia renalis.

Pyralis renalis, Hübn, Eur. Schmett., Pyr. f. 157 (1818); Geyer, Eur. Schmett., Noct. ff. 864–5; Staud. Cat. Lep. pal. p. 233.
Hæmerosia renigera, Dup. Lép. Fr., Suppl. iii. p. 570, pl. 47. f. 7 (1836).
Anthophila renifera, Fr. Neue Beitr. vi. p. 103, pl. 545. f. 1 (1852).

Head, thorax, and abdomen ochreous whitish tinged with blood-red, the pectus, legs, and ventral surface of abdomen deeper red.

Fore wing ochreous whitish tinged with blood-red, the medial area slightly darker; antemedial line blood-red defined by whitish on inner side, angled outwards on subcostal nervure, then sinuous and somewhat oblique; reniform a narrow silvery-white lunule defined by deep red and constricted at middle; postmedial line deep red with a white spot on its outer edge at costa, and defined on outer side by white from lower angle of cell to inner margin, oblique

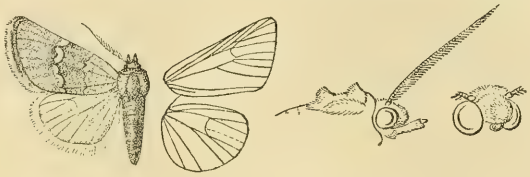


Fig. 121.—*Hæmassia renalis*, ♂. ¾.

from costa to vein 6 just beyond the reniform, slightly incurved at discal fold, incurved and sinuous below vein 4, some white points beyond it on costa; subterminal line very indistinct, reddish, nearly straight; cilia deep red with a fine dark line at middle. Hind wing ochreous whitish tinged with blood-red; a fine deep red terminal line.

Hab. S. France, Zeller, Frey, Leech, and Sand Colls.; Asia Minor, Pontus, Bithynia, Amanus Mts., 1 ♀; Syria, Mardin; W. Turkestan, Turcomania. *Exp.* 26 millim.

Larva. Kirby, Butt. & Moths Eur. p. 289; Hffm. Raup. p. 144, pl. 36. f. 17.

Yellowish green spotted with red; all the prolegs fully developed. Food-plants: flowers of *Lactuca sativa* and *Chondrilla juncea*. 5.

Genus **GALGULA**.

	Type.
Galgula, Guen. Noct. ii. p. 239 (1852)	*partita*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching vertex of head and moderately fringed with scales in front, the 3rd moderate, porrect; frons smooth, with tuft of hair; eyes large, round; antennæ of male ciliated; thorax clothed chiefly with scales and without crests; build slender; tibiæ moderately fringed with hair; abdomen with dorsal crest at base only. Fore wing with the apex somewhat produced and acute, the termen obliquely curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with dark patch on costal area beyond postmedial line ..... *subapicalis*.

B. Fore wing without dark patch on costal area beyond postmedial line.

a. Fore wing with the postmedial line whitish defined by brown on inner side ..... *partita*.

b. Fore wing with the postmedial line brown without whitish on outer side ..... *castra*.

4133. Galgula subapicalis, n. sp. (Plate CXXXIII. fig. 24.)

♂. Head and thorax bright red-brown; palpi blackish; lower part of frons white; pectus and legs whitish irrorated with brown, the tarsi blackish ringed with white; abdomen fuscous with some whitish scales at base, the ventral surface whitish. Fore wing bright red-brown; subbasal line represented by slight blackish spots below costa and cell with a small spot beyond them in cell; antemedial line black, rather punctiform, defined on inner side by some whitish scales, waved, oblique to submedian fold and angled inwards on vein 1; reniform represented by two slight black points with some whitish scales on their outer side, a diffused oblique black bar above it from costa; traces of an oblique diffused dark shade from lower angle of cell to inner margin; postmedial line blackish slightly defined by whitish on outer side, excurved from costa to vein 6, then represented by black points on the veins with whitish points on their outer side, excurved to vein 4, then oblique, a black patch beyond it on costa; subterminal line indistinct, dark, excurved at middle; the interspaces of terminal area with faint blackish streaks with some whitish scales on them. Hind wing fuscous brown, the cilia whitish; the underside greyish suffused and irrorated with fuscous; a slight discoidal point and traces of a curved postmedial line.

Hab. Jamaica, Up Park, 1 ♂, Newcastle, 1 ♂ type. *Exp.* 18 millim.

4134. Galgula partita.

Galgula partita, Guen. Noct. ii. p. 239 (1852) ♂; Staud. Cat. Lep. pal. p. 232.
Galgula hepara, Guen. Noct. ii. p. 239, pl. x. f. 11 (1852) ♀; Smith, Cat. Noct. N. Am. p. 314.
Galgula subpartita, Guen. Noct. iii. p. 399 (1852).
Hydrelia ferruginea, Wlk. xii. 814 (1857).
Euclidia externa, Wlk. xxxiii. 985 (1865).
Thalpochares baueri, Staud. Berl. ent. Zeit. xiv. p. 122 (1870).
Telesilla vesca, Morr. Ann. Lyc. Nat. Hist. N. Y. xi. p. 103 (1876).
Galgula sorex, Möschl. Abh. Senck. Ges. xiv. p. 51 (1886).
Thalpochares bias, Druce, Biol. Centr.-Am., Het. i. p. 315, pl. xxix. f. 18 (1889).
Thalpochares hippotamada, Druce, Biol. Centr.-Am., Het. i. p. 315, pl. xxix. f. 19 (1889).

♂. Head and thorax rufous; palpi brownish; abdomen grey tinged with brown. Fore wing greyish suffused with rufous, the veins with slight pale streaks; antemedial line indistinct, whitish, with dark points on it below costa and on subcostal nervure, the latter with another dark point before it, angled outwards in submedian fold, then oblique; orbicular and reniform defined at sides by whitish, the former elliptical, the latter constricted at middle and angled inwards on median nervure, with a dark patch before it from costa to discal fold; postmedial line whitish defined on inner side by red-brown except at costa and interrupted at the veins, strongly bent outwards below costa, obliquely excurved to vein 2,

then oblique, a series of black points beyond it on the veins; an indistinct whitish subterminal line, defined on inner side by red-brown, oblique, slightly sinuous, incurved at vein 2; a terminal series of faint minute brown lunules; cilia dark brown at base, whitish at tips. Hind wing whitish suffused with brown especially on terminal area; cilia whitish with a brown line near base; the underside whitish tinged with brown, a brown discoidal striga; curved postmedial line from costa to vein 3 and terminal series of dark points from apex to vein 2.

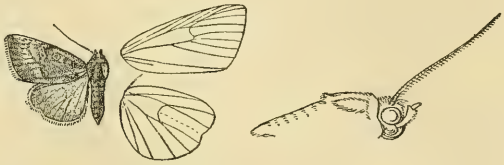


Fig. 122.—*Galgula partita*, ♂. ½.

♀. Head, thorax, and fore wing dark red-brown, the last with the markings indistinct; cilia sometimes white with a brown line through them; hind wing dark brown.

Ab. 1 (*baueri*). Much paler; fore wing yellowish grey. — ? Andalusia.

Ab. 2. Hind wing suffused with dark brown instead of rufous.

Hab. Canada; U.S.A., 4 ♂, 1 ♀, Massachusetts, New York, Ohio, 1 ♂, Florida (*Doubleday*), 4 ♂, 1 ♀, type and type *externa*, Texas, Dallas (*Boll*), 3 ♂, 2 ♀, California (*Walsingham*), 2 ♂, 1 ♀, Sta. Barbara (*Mrs. Van Zandt*), 1 ♀; Mexico, Jalapa (*Trujillo*), 1 ♂, Orizaba (*Godman*), 1 ♀; Guatemala, S. Geronimo (*Champion*), 2 ♂, 1 ♀, types *bias* and *hippotamada*, Vera Paz (*Champion*), 1 ♀, Godman-Salvin Coll.; Jamaica; Cuba; Azores, Sta. Cruz (*Grant*), 3 ♂, S. Miguel (*Grant*), 1 ♀; Madeira; Canaries, Teneriffe (*Leech*, *W. White*), 7 ♂, 1 ♀, Guimar (*Walsingham*), 1 ♂, 1 ♀; ? Spain, Andalusia; Hab. ign., 1 ♂, type *ferruginea*. *Exp.* 22–32 millim.

4135. **Galgula castra.** (Plate CXXXIII. fig. 25.)

Galgula castra, Schaus, J. N.Y. Ent. Soc. vi. p. 119 (1898).

♂. Head and thorax yellowish suffused with rufous; palpi dark brown, whitish at base; abdomen yellow tinged with rufous. Fore wing greyish ochreous suffused with rufous, the costal edge bright rufous with some black scales below it at middle; subbasal line brown, curved, from costa to submedian fold, with a black point on it below costa; antemedial line brown, sinuous, strongly angled outwards in submedian fold, angled inwards on vein 1, with black points on it below costa and on subcostal and median nervures; orbicular and reniform with faint whitish annuli slightly defined by brown, the former elliptical, the latter strongly angled inwards on median nervure, a black patch before it on costal area; a diffused

oblique red-brown medial line from lower angle of cell to inner margin, closely approximated to the postmedial line, which is red-brown strongly bent outwards below costa, very oblique to vein 4, then incurved, a series of black points beyond it on the veins; subterminal line whitish defined on inner side by red-brown, excurved below vein 7 and at middle and minutely dentate at veins 7, 6, 4, 3, 2; a fine red-brown terminal line; cilia dark red-brown with a fine pale line at base. Hind wing white tinged with yellow; the underside with the costal area and terminal area to vein 4 suffused with fiery red, a curved postmedial line from costa to vein 4 and fine terminal line.

Hab. Brazil, Castro Paraña (*D. Jones*), 1 ♂. *Exp.* 28 millim.

Genus **MICRATHETIS**, nov.

Type, *M. triplex*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching vertex of head and moderately scaled, the 3rd moderate; frons smooth; eyes large, round; antennæ of male ciliated; thorax clothed almost entirely with scales and without crests; build slender; tibiæ smoothly scaled; abdomen without crests. Fore wing with the apex rounded, the termen very slightly excised below apex and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with the postmedial line double, punctiform, excurved below costa, then slightly oblique.
  a. Fore wing with the cilia whitish tinged with rufous ..... *canifimbria*.
  b. Fore wing with the cilia concolorous..... *triplex*.
B. Fore wing with the postmedial line whitish defined on each side by brown and very oblique throughout ..... *dasarada*.

4136. **Micrathetis canifimbria.** (Plate CXXXIII. fig. 26.)

Celæna canifimbria, Wlk. xxxv. 1958 (1866).

♂. Head and thorax cupreous red-brown; abdomen grey-brown. Fore wing cupreous red-brown, with slight dark irroration, the costal edge fulvous yellow; traces of a waved antemedial line; orbicular and reniform hardly defined, with a dark patch between them, the former rounded, the latter constricted at middle: a slight dark mark on middle of costa; postmedial line represented by a double series of indistinct black points, bent outwards below costa, excurved to vein 4, then oblique; the terminal area deeper rufous; faint traces of a subterminal line excurved at middle; cilia bright orange-yellow. Hind wing brown with a greyish tinge; cilia white mixed with brown; the underside whitish suffused and irrorated with brown, a slight discoidal striga and indistinct curved postmedial line.

♀. Darker.

Hab. Brazil, 2 ♂ type, Rio Janeiro, 1 ♂, Organ Mts., Tijuca (*Wagner*), 1 ♀. *Exp.* 22 millim.

4137. Micrathetis triplex.

Laphygma triplex, Wlk. xi. 721 (1857).
Laphygma spilomela, Wlk. xxxii. 648 (1865).
Galgula contraria, Herr.-Schäff. Zool.-min. Corresp.-blatt. Regensb. xxii. p. 153 (1868).
Caradrina conviva, Harv. Can. Ent. viii. p. 6 (1876); Smith, Cat. Noct. N. Am. p. 196.
Caradrina subaquila, Harv. Can. Ent. x. p. 57 (1878); Smith, Cat. Noct. N. Am. p. 196.

Head and thorax white tinged with yellow and irrorated with a few black scales; palpi with the 2nd joint black at sides; tibiæ and tarsi blackish above; abdomen white dorsally tinged with fuscous. Fore wing yellowish white tinged with rufous and slightly irrorated with fuscous; the basal area with three black points on median nervure; antemedial line represented by an indistinct double curved series of black points; orbicular represented by a minute

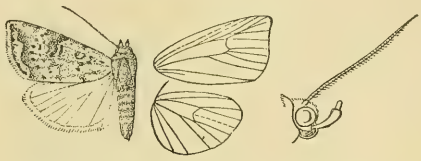


Fig. 123.—*Micrathetis triplex*, ♂. $\frac{3}{2}$.

black point; reniform with black lunule in centre and pale annulus slightly defined by black; medial line diffused, black and oblique from costa to reniform, very faint from lower angle of cell to inner margin; postmedial line represented by a double curved series of black points; subterminal line defined by dark suffusion on inner side, minutely waved, arising from below apex, incurved at discal fold and excurved at middle; a terminal series of small black lunules; cilia fuscous. Hind wing semihyaline white; a slight dark terminal line from apex to vein 2; the underside with the costal area tinged with ochreous and irrorated with brown.

Ab. 1. Fore wing pale grey; hind wing greyish, the terminal area tinged with brown.

Ab. 2. *subaquila*. Head, thorax, and fore wing much more strongly suffused with rufous.

Ab. 3. Head, thorax, and fore wing suffused with dark brown.

Hab. U.S.A., Texas, 3 ♂, 1 ♀, types *conviva* and *subaquila*, California (*D'Urban*), 1 ♂; Mexico, Guerrero (*H. H. Smith*), 1 ♂, Presidio (*Forrer*), 1 ♂, 2 ♀, Yucatan (*Gaumer*), 1 ♀; Honduras (*Dyson*, *Robertson*), 1 ♂, 1 ♀ type; Guatemala, Champerico (*Champion*), 1 ♂, Vera Paz (*Champion*), 1 ♀, Godman-Salvin Coll.; Panama, La Chorrera (*Dolby-Tyler*), 1 ♂; Bahamas, Nassau (*Bonhote*), 1 ♂, Abaco (*Bonhote*), 1 ♀; Jamaica (*Kaye*), 1 ♂, Runaway Bay (*Walsingham*),

1 ♀; Cuba, Santiago (*Schaus*), 3 ♂, 1 ♀; Haiti (*Tweedie*), 2 ♂, 2 ♀ type *spilomela*; Grenada (*H. H. Smith*), 5 ♂, 6 ♀; Paraguay, Sapucay (*Foster*), 1 ♂, 1 ♀. *Exp.* 20–26 millim.

4138. Micrathetis dasarada.

Thalpochares dasarada, Druce, Biol. Centr.-Am., Het. ii. p. 498, pl. 95. f. 28 (1898).

Head, thorax, and abdomen pale ochreous slightly tinged with olive-brown; palpi brownish; fore legs brownish, the tarsi brown ringed with ochreous. Fore wing pale ochreous slightly irrorated with brown, the costal edge rufous to postmedial line; the inner area suffused with olive-brown to the postmedial line which is defined by olive-brown on inner side; a slight black point at middle of cell and black discoidal point; postmedial line pale ochreous with fine brown line on outer edge, oblique, slightly incurved below vein 5; subterminal line indistinct, whitish defined by brown on inner side, oblique, arising from apex where there is an oblique whitish fascia above it, a terminal series of black points; cilia ochreous with a rufous line through them, blackish at apex. Hind wing white slightly tinged with ochreous; a fine brownish terminal line; cilia with a faint brownish line through them; the underside with the costa tinged with rufous and slightly irrorated with brown, a terminal series of black points.

Ab. 1. Fore wing tinged with rufous instead of olive-brown.

Ab. 2. Fore wing much whiter with hardly any rufous or olive suffusion.

Ab. 3. Fore wing with minute more or less incomplete black discoidal annulus.

Hab. Mexico, Presidio (*Forrer*), 1 ♀, Atoyac (*H. H. Smith*), 1 ♀, Teapa (*H. H. Smith*), 7 ♂, type; Guatemala, S. Geronimo (*Champion*), 3 ♀, El Reposo (*Champion*), 1 ♂, Cubilguitz (*Champion*), 1 ♀; Costa Rica, Irazu (*Rogers*), 5 ♂; Panama, Chiriqui (*Ribbé*), 1 ♀, Godman-Salvin Coll., Cana Mines (*Tylecote*), 1 ♂; Jamaica, Constant Springs (*Walsingham*), 1 ♂, 3 ♀, Moneague (*Cockerell*), 1 ♂ (*Rendall*), 1 ♀; Cuba, Santiago (*Schaus*), 1 ♂, 4 ♀; Br. Guiana, Bartica (*Kaye*), 1 ♀; Surinam, Paramaribo (*Dohrn*), 1 ♂; Brazil, Itaparica (*Meade-Waldo*), 2 ♂, 1 ♀, Organ Mts., Tijuca (*Wagner*), 1 ♀, Rio Janeiro, 4 ♂. *Exp.* 14–22 millim.

Genus STYGIATHETIS, nov.

Type, *S. mus.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching vertex of head and moderately fringed with hair in front, the 3rd long, oblique; frons with short truncate conical prominence with raised edges; eyes large, round; antennæ of male fasciculate; thorax clothed with long hair and hair-like scales and without crests; tibiæ fringed with rather long hair; abdomen clothed with rough hair and with lateral fringes of hair but without crests, the claspers of male large. Fore wing narrow, the costa and inner margin subparallel, the

apex rounded, the termen evenly curved, crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4139. Stygiathetis mus.

Radinacra mus, Hmpsn. Ill. Het. B.M. viii. p. 77, pl. 145. f. 9 (1891); id. Moths Ind. ii. p. 268.

Head and thorax brown, the scales tipped with white; antennæ ringed with white at base; palpi, pectus, and legs fuscous mixed with some grey, the tarsi ringed with white; abdomen greyish brown. Fore wing grey-brown slightly irrorated with fuscous; subbasal line represented by black points below costa and cell; antemedial line blackish, slightly angled outwards below costa, then almost erect; orbicular absent; reniform slightly defined by white points; an indistinct medial line oblique from costa to median nervure; postmedial line blackish produced to slight streaks on the veins, excurved from costa to vein 4, then incurved, some pale points beyond it on costa; subterminal line indistinct, whitish

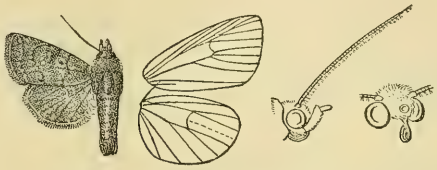


Fig. 124.—*Stygiathetis mus*, ♂. ½.

slightly defined by brown on inner side and somewhat excurved below vein 7 and at middle; a terminal series of slight black points; a fine pale line at base of cilia. Hind wing fuscous brown; cilia with ochreous line at base followed by a brown line and the tips grey; the underside white thickly irrorated with brown, a black discoidal lunule, sinuous postmedial line, indistinct diffused subterminal line, and terminal series of small lunules.

Hab. Madras, Nilgiri plateau (*Hampson*), 1 ♂, 3 ♀ type. *Exp.* 30 millim.

Genus CRAMBODES.

Type.

Crambodes, Guen. Noct. ii. p. 152 (1852) ..... *talidiformis.*

Proboscis fully developed; palpi obliquely upturned, the 2nd joint reaching about to middle of frons and moderately fringed with hair in front, the 3rd short; frons smooth; eyes large, round; antennæ of male bipectinate with very short fasciculate branches, of female minutely serrate; thorax clothed with scales and hair mixed, the prothorax with small spreading crest, the mesothorax with slight paired crests, the metathorax with spreading crest;

tibiæ slightly fringed with hair; abdomen with dorsal crest at base only. Fore wing with the apex rounded, the termen evenly curved and hardly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4140. Crambodes talidiformis.

Crambodes talidiformis, Guen. Noct. ii. p. 152 (1852); Smith, Cat. Noct. N. Am. p. 194.
Carvanca conjungens, Wlk. xv. 1661 (1858).

Head and thorax pale ochreous tinged with rufous; palpi brown at extremity; frons with lateral brown bars; antennæ brown; tegulæ with black line near upper edge; vertex of thorax with some black scales; fore tibiæ banded with brown, the tarsi brown with pale rings; abdomen pale ochreous slightly tinged with brown. Fore wing ochreous tinged in parts with rufous, the costal area suffused with black-brown to near apex, the veins streaked with brown; a red-brown streak in cell; the basal half of submedian fold defined on each side by red-brown streaks; antemedial line double, the inner line red-brown, the outer blackish, oblique and slightly sinuous to submedian fold near postmedial line, then very strongly angled inwards on vein 1 and outwards above inner margin; reniform a narrow white bar incompletely defined by black; postmedial line black, strongly bent outwards below costa, then reduced to black points on the veins to just beyond lower angle of cell, then dentate with double black points on the veins

Fig. 125.—*Crambodes talidiformis*, ♂. ½.

beyond it, some whitish points beyond it on costa; subterminal line defined by rufous suffusion on inner side and by obliquely placed black streaks above and below vein 6, arising from termen just below apex, dentate, oblique to discal fold, angled outwards at veins 4, 3 and inwards in submedian fold and bent outwards to tornus; a rufous shade at middle of termen and a terminal series of small black spots; cilia chequered rufous and whitish. Hind wing white, the terminal area slightly tinged with rufous, in female more uniformly tinged with rufous, the extremity of median nervure and base of vein 2 with slight dark streaks; a faint discoidal striga; a terminal series of black points from apex to vein 2; the underside with the costal area suffused and irrorated with red-brown, a slight discoidal lunule and faint postmedial line from costa to vein 6 and points on veins 4, 3.

Hab. Canada; U.S.A., Northern, Eastern, Middle, and Central States (*Doubleday*, *Burg*, *Herring*), 3 ♂, 5 ♀ type and type *conjungens*, Kansas, 1 ♂, Texas, Dallas (*Boll*), 1 ♂, Colorado, Durango (*Oslar*), 1 ♂, 3 ♀. *Exp.* 30–34 millim.

Larva. Head small, pale brownish. Body slender, the feet equal; green with a distinct red substigmatal stripe, pale-centred; a little red also in the double whitish dorsal line. Food-plant: Verbena.—H. G. D.

Genus **PLATYSENTA.**

	Type.
Platysenta, Grote, 6th Rep. Peab. Ac. Sci. p. 28 (1874)	*videns.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching vertex of head and moderately scaled, the 3rd moderate; frons smooth; antennæ of male ciliated; thorax clothed chiefly with scales, the pro- and metathorax with spreading crests; build slender; tibiæ moderately fringed with hair; abdomen with dorsal crest at base only. Fore wing rather ample, the apex somewhat produced and acute, the termen obliquely curved and hardly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anatomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with black streaks beyond the cell above and below vein 4 ..... *temecula.*
B. Fore wing without black streaks beyond the cell above and below vein 4.
  a. Fore wing with blackish suffusion below median nervure. *discistriga.*
  b. Fore wing without blackish suffusion below median nervure.
    a^1. Fore wing rufous ..... *videns.*
    b^1. Fore wing ochreous slightly tinged with reddish brown. *albipuncta.*

*4141. **Platysenta temecula.** (Plate CXXXIII. fig. 27.)

Platysenta temecula, Barnes, Can. Ent. xxxvii. p. 194 (1905).

♂. Head and thorax reddish brown mixed with fuscous; tegulæ with slight dark medial line; abdomen whitish tinged with brown. Fore wing reddish brown suffused in parts with fuscous, the veins dark; a diffused dark shade on median nervure, thence diffused to termen above tornus, a slight oblique shade from termen just below apex defined above and below by rather paler tones; antemedial line represented by a pale point on costa; a white discoidal bar with yellowish points before and beyond it; black streaks beyond the cell above and below vein 4; postmedial line just traceable, with a pale point at costa, excurved to vein 4, then incurved; a terminal series of small black lunules; cilia chequered brown and whitish. Hind wing whitish tinged with brown especially towards termen; cilia white with a dark line near base; the underside with the costal and terminal areas tinged with reddish, a dark discoidal point and postmedial line.

Hab. U.S.A., Arizona, Huachuca Mts. *Exp.* 28 millim. This species is unknown to me, figured from a drawing from type in Coll. W. Barnes.

4142. Platysenta discistriga. (Plate CXXXIII. fig. 28.)

Platyperigea discistriga, Smith, Trans. Am. Ent. Soc. xxi. p. 61, pl. vi. f. 10 (1894); Dyar, Cat. Lep. N. Am. p. 109.

Head and thorax ochreous mixed with blackish; palpi with black patches at sides of 2nd and 3rd joints; tarsi fuscous with pale rings; abdomen brownish ochreous, with the crest at base blackish. Fore wing ochreous tinged with rufous and slightly irrorated with black, more strongly in and below lower part of cell and from cell towards termen below apex and tornus, the veins with slight dark streaks; subbasal line represented by a faint oblique pale striga from costa, the antemedial line by a pale point on costa, black points on the veins and one above inner margin further from base; orbicular represented by two slight oblique black striæ, the reniform by black bars on each side of the discoidal vein with a slight whitish spot beyond them at lower angle of cell; postmedial line represented by a black striga from costa defined by whitish on outer side, then by a series of short black streaks on the veins conjoined by a faint dentate line, bent outwards below costa and very oblique below vein 4; subterminal line represented by very ill-defined dentate dark marks between veins 7 and 2, angled outwards at veins 6, 4, 3; the terminal area more rufous; a terminal series of minute black lunules; cilia blackish intersected by yellowish-white streaks at the veins. Hind wing pure white; the underside with the costal area irrorated with pale brown, a blackish discoidal lunule and series of black points on apical half of termen.

Hab. U.S.A., Colorado, Durango, 1 ♂, Glenwood Springs, 1 ♂, 1 ♀. *Exp.* 34–38 millim.

4143. Platysenta videns.

Leucania videns, Guen. Noct. i. p. 78 (1852); Smith, Cat. Noct. N. Am. p. 184.
Nonagria indigens, Wlk. xi. 713 (1857).
Platysenta atriciliata, Grote, 6th Rep. Peab. Ac. Sci. p. 28 (1874); id. Bull. Buff. Soc. Nat. Sci. ii. pl. 1. f. 2.
Caradrina meskei, Speyer, Stett. ent. Zeit. xxxvi. p. 116 (1875).

♂. Head and thorax rufous mixed with fuscous and grey; palpi fuscous; tarsi fuscous ringed with white; abdomen pale rufous, the basal crest blackish. Fore wing rufous, the veins irrorated with black; a slight black streak in base of cell; antemedial line represented by black and white points on the veins; orbicular represented by a black point above median nervure; a diffused blackish streak at lower angle of cell with small white spot at lower angle with whitish striga before it and point beyond it; postmedial line

represented by a double series of black points on the veins with whitish points between them, bent outwards below costa and oblique below vein 4, some white points beyond it on costa; subterminal line absent; a terminal series of slight black lunules; cilia blackish mixed with grey, intersected with white at base and with slight black line at middle. Hind wing white, the terminal

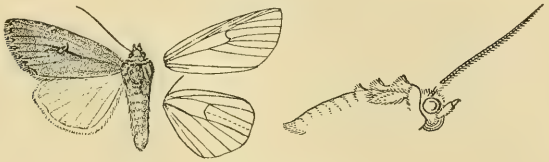


Fig. 126.—*Platysenta videns*, ♂. ½.

area slightly tinged with brown; a fine dark terminal line; cilia white mixed with fuscous at tips; the underside with the costal area suffused with rufous, the veins of terminal half irrorated with black to vein 2, a blackish discoidal striga and terminal series of black points from apex to vein 2.

Hab. U.S.A., 1 ♂ type *atriciliata*, Massachusetts, Distr. of Columbia, Illinois, Florida (*Doubleday*), 2 ♂ type and type *indigens*, Colorado. *Exp.* 34–36 millim.

Larva. Dull green with a number of longitudinal white lines, the stigmatal line stronger; ventral claspers deep pink; head green with two brown streaks. Food-plant: ?*Solidago*.

4144. **Platysenta albipuncta.** (Plate CXXXIII. fig. 29.)

Platysenta albipuncta, Smith, J. N.Y. Ent. Soc. x. p. 46 (1902); Dyar, Cat. Lep. N. Am. p. 109.

♂. Head and thorax greyish ochreous mixed with fuscous brown; palpi fuscous; pectus whitish; tarsi fuscous ringed with white; abdomen whitish suffused with brown, the basal crest black and white. Fore wing greyish ochreous, the disk tinged with reddish brown, the terminal area suffused with fuscous except at apex, the veins of terminal area with slight dark streaks; subbasal and antemedial lines absent; orbicular represented by a slight whitish mark above median nervure; a diffused fuscous streak on terminal half of median nervure extending to beyond the cell; a small white spot at lower angle of cell with whitish points before and beyond it; postmedial line represented by a series of black points on the veins with whitish points beyond them, bent outwards below costa and oblique below vein 4, some whitish points beyond it on costa; subterminal line absent; cilia fuscous intersected with white. Hind wing white, the veins of terminal area slightly tinged with fuscous; a fine dark terminal line; the underside with the

costal area irrorated with brown, a slight blackish discoidal spot and terminal series of minute lunules from apex to vein 2.

♀. Fore wing rather more uniform reddish brown.

Hab. U.S.A., Texas, Harris Co., 1 ♂ co-type, Dallas (*Boll*), 1 ♀. *Exp.* 34 millim.

Genus **GONODES**, nov.

Type, *G. liquida.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching vertex of head and moderately fringed with scales, the 3rd joint moderate; frons smooth; eyes large, round; antennæ of male ciliated; thorax clothed chiefly with scales, the pro- and metathorax with spreading crests; tibiæ moderately fringed with hair; abdomen with dorsal crest at base only. Fore wing with the apex somewhat produced, the termen excised from below apex to vein 4, then oblique; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with vein 3 defined above and below by white streaks ..... *dianiphea.*
B. Fore wing with vein 3 defined above by a white streak towards extremity ..... *albifissa.*
C. Fore wing with vein 3 not defined by white streaks.
  a. Fore wing with oblique red-brown line from lower angle of cell to subterminal line above tornus ..... *obliqua.*
  b. Fore wing without oblique line from lower angle of cell to above tornus.
    a^1. Fore wing with the orbicular absent ..... *liquida.*
    b^1. Fore wing with the orbicular an oblique wedge-shaped whitish mark ..... *aroensis.*

*4145. **Gonodes dianiphea.** (Plate CXXXIII. fig. 30.)

Gonodes dianiphea, D. Jones, Trans. Ent. Soc. 1908, p. 162.

♂. Head and thorax ochreous tinged with rufous and mixed with brown; second joint of palpi with blackish patch; frons with slight black lateral bars; tegulæ with indistinct blackish lines at middle and near tips; mid tibiæ with blackish spot near extremity, the tarsi blackish with pale rings; abdomen pale ochreous, the basal crest mixed with black. Fore wing ochreous slightly irrorated with fuscous, the cell and area just below it on medial area suffused with red-brown, a large triangular brown patch on terminal area from apex to below vein 4; subbasal line represented by two black striæ from costa; a short black streak below base of cell; antemedial line rather indistinct, double at costa and below cell, angled outwards below costa, then oblique and rather irregular, the outer line very strongly angled outwards to medial line above inner margin; orbicular absent; reniform a triangular brown spot with white annulus partly defined by black and with wedge-shaped white mark running inwards from it above median nervure; a diffused oblique black striga from middle of costa and oblique brown line

from lower angle of cell to inner margin, excurved in submedian interspace; a broad ochreous oblique white band beyond the cell, bent outwards to apex; postmedial line represented by a series of black points, strongly bent outwards below costa, then oblique, angled outwards on vein 1, the points with slight dentate line between them below vein 2; vein 3 beyond the postmedial line defined above and below by white streaks with a fine black streak above; the terminal part of costa with alternating white and blackish points; the brown terminal patch crossed by a faint incurved dark subterminal line; a fine dark terminal line and a small black spot below vein 2 defined by a white lunule; cilia red-brown intersected by white streaks at veins 3 and 2. Hind wing yellowish white, the terminal area suffused with reddish brown except towards tornus; a small dark discoidal spot and fine dark terminal line; cilia ochreous at base, white at tips; the underside with the costal and terminal areas slightly irrorated with black, a black discoidal spot and postmedial line, excurved and crenulate to vein 4, then incurved.

Hab. Brazil, Castro Paraña, type † in Coll. D. Jones. *Exp.* 28 millim.

*4146. Gonodes albifissa. (Plate CXXXIII. fig. 31.)

Gonodes albifissa, Druce, A. M. N. H. (8) i. p. 298 (1908).

♀. Head and thorax white faintly tinged with rufous and with a few black scales; antennæ except at base and tarsi fuscous; abdomen grey-white dorsally suffused with fuscous. Fore wing grey-white irrorated with brown, the inner area rufous except at base, a brownish patch from termen from apex to vein 4 extending to lower angle of cell, the veins beyond the cell brown defined by fine white streaks; antemedial line represented by an oblique brown striga from costa and a very oblique slightly sinuous line from subcostal nervure to inner margin, a small triangular red-brown patch beyond it in lower part of cell; end of cell yellow tinged with red; reniform a brown bar defined by white, a wedge-shaped red-brown mark beyond it above vein 3; medial line represented by an oblique diffused brown bar from costa and a line angled inwards from cell to vein 1; postmedial line represented by black points bent outwards below costa and a faint incurved line from vein 3 bent outwards at vein 1, some white points with slight brown streaks between them beyond it on costa; an oblique white streak from apex, diffused towards costa; subterminal line hardly traceable, whitish, slightly defined by brown on outer side between veins 7 and 4; a white fascia above terminal part of vein 3 intersecting the cilia; a fine black terminal line slightly defined by white on inner side. Hind wing white suffused with brown except at base; a slight brown discoidal lunule and brown terminal line; cilia white; the underside white, the costal and terminal areas irrorated with

brown, a black discoidal lunule, crenulate postmedial line, and terminal series of small lunules.

Hab. S.E. Peru, S. Domingo (*Ockenden*), type † ♂ in Coll. Druce. *Exp.* 34 millim.

4147. Gonodes obliqua. (Plate CXXXIII. fig. 32.)

Gonodes obliqua, Druce, A. M. N. H. (8) iii. (1909) ined.

♂. Head and thorax pale rufous, the vertex of head and tegulæ with a whitish tinge, the latter with some black scales at tips; palpi blackish except at base; tarsi ringed with blackish; abdomen reddish ochreous dorsally tinged with brown. Fore wing pale rufous with slight dark irroration, the apical third of wing with a whitish tinge and slight fuscous suffusion; subbasal line indistinct, dark, waved, from costa to inner margin, a black point beyond it in cell; the antemedial line from costa near middle, white slightly defined by blackish on outer side, oblique and sinuous to the reniform, then slight, blackish, angled inwards on median nervure, oblique and dentate to inner margin; claviform and orbicular absent; reniform red with yellow bars at sides, very narrow and constricted at middle, a slightly downcurved red streak from its lower extremity to termen just above tornus; postmedial line fine, blackish, slightly defined by white on outer side at costa, bent outwards below costa, then dentate, incurved between veins 5 and 2 and ending at tornus; subterminal line very faint, pale, with slight red-brown spots on its inner side and a black spot above vein 2, minutely waved, incurved at discal fold; a slight lunulate dark terminal line; cilia with a fine white line at base. Hind wing yellowish white, the terminal area tinged with rufous narrowing to tornus; a blackish discoidal bar; cilia white; the underside with the costal area tinged with rufous, a black discoidal lunule, sinuous postmedial line, and fine terminal line.

Hab. Colombia, Minca (*H. H. Smith*), 1 ♂. *Exp.* 34 millim. Type † in Coll. Druce.

4148. Gonodes liquida.

Ipimorpha liquida, Möschl, Abh. Senck. Ges. xiv. p. 48, f. 17 (1886).
Cyathissa violascens, Schaus, Trans. Am. Ent. Soc. xxi. p. 225 (1894).
Drobeta leada, Druce, Biol. Centr.-Am., Het. ii. 494, pl. 95. f. 12 (1898).

♂. Head white, 2nd joint of palpi at side and antennæ rufous; thorax ochreous white irrorated with a few rufous scales, the metathoracic crest rufous; tarsi brown ringed with white; abdomen ochreous white dorsally suffused with brown, the basal crest white tipped with brown. Fore wing ochreous white tinged with red-brown from base to middle of costa and tornus, the apical half pale rufous irrorated with deep rufous with the veins pale; subbasal line represented by slight curved red-brown marks from costa and

from cell to inner margin; an oblique diffused red-brown line from median nervure at antemedial line to above inner margin; antemedial line indistinct, rufous, double, oblique, waved; orbicular absent; the inner edge of the rufous area defined by white from costa to median nervure; reniform rather large, its outer edge indented at middle; postmedial line defined by white on outer side, bent outwards below costa, then excurved, slightly angled inwards at vein 2 and bent outwards to inner margin near tornus, some white points beyond it on costa; a diffused whitish apical patch; subterminal line represented by a series of red-brown spots, incurved at discal fold, then excurved; a black spot at tornus; cilia rufous

Fig. 127.—*Gonodes liquida*, ♂. $\frac{1}{1}$.

with a yellow line at base. Hind wing yellowish tinged with rufous, the terminal area suffused with rufous; a slight brown discoidal bar; cilia yellow with a rufous line through them; the underside with the costal area slightly irrorated with brown, a blackish discoidal spot, a waved rufous postmedial line incurved below vein 3, and traces of a diffused subterminal band.

♀. Hind wing more uniformly suffused with brown.

Ab. 1. Fore wing without the black spot at tornus.

Hab. Mexico, Jalapa, type † *violascens* in U.S. Nat. Mus.; Guatemala, Volcan de Atitlan (*Champion*), 1 ♀ type *leada*, Godman-Salvin Coll.; Jamaica, Up Park, 1 ♂; Cuba, Baracoa (*Schaus*), 1 ♂, 1 ♀, Santiago (*Schaus*), 4 ♀; Dominica (*Elliott*), 1 ♀; Brazil, Rio Janeiro, 1 ♂; Paraguay, Sapucay (*Foster*), 1 ♂; Peru, 1 ♀. *Exp.* 22–30 millim.

4149. **Gonodes aroensis.** (Plate CXXXIV. fig. 1.)

Ipimorpha arœnsis, Schaus, Trans. Am. Ent. Soc. xxx. p. 152 (1904).

♂. Head and thorax brownish white with a few dark scales; the dorsum of thorax dark brown; palpi black at sides, the extremities of 2nd and 3rd joints white; frons with lateral black bars; antennæ black; tarsi black ringed with white; abdomen brownish white dorsally suffused with fuscous, sublateral black spots on terminal segments. Fore wing brownish ochreous; subbasal line represented by slight diffused black striæ from costa and cell, with a short diffused black fascia beyond it on inner margin and slight oblique dark line from median nervure to vein 1; faint

traces of a double curved antemedial line with double black points on median nervure and vein 1; orbicular an oblique wedge-shaped white mark slightly defined by black except above; reniform a pale bar defined by blackish scales, expanding into an obscure spot at lower angle of cell and with black spot beyond it at upper angle; a rather diffused oblique black medial line from costa to median nervure; postmedial line double filled in with whitish, bent outwards below costa, excurved to vein 4, then hardly traceable with black point beyond it on vein 2, some white points with black streaks between them beyond it on costa; subterminal line very indistinct, pale, with black points on inner side below vein 5 and small black spot below 6; an oblique rather sinuous black streak from termen below apex with whitish above it; the terminal area slightly more tinged with brown with pale streaks on the veins: a terminal series of slight black lunules; cilia yellow. Hind wing whitish tinged with brown, the terminal area suffused with brown; a dark discoidal lunule and terminal series of slight brown lunules; cilia white; the underside white irrorated with a few black scales, a black discoidal spot, minutely waved postmedial line incurved below vein 2, and terminal series of small black lunules.

Hab. Venezuela, Aroa, 1 ♂. *Exp.* 26 millim.

Genus **BALSA.**

	Type.
Balsa, Wlk. Can. Nat. & Geol. v. p. 250 (1860)	*malana.*
Gargaza, Wlk. xxxv. 1733 (1865)	*tristrigella.*
Nolophana, Grote, Bull. Buff. Soc. Nat. Sci. i. p. 169 (1873) ...	*malana.*
Asisyra, Grote, Bull. Buff. Soc. Nat. Sci. i. p. 169 (1873)	*tristrigella.*

Proboscis fully developed; palpi obliquely porrect, extending about the length of head, the 2nd joint fringed above and below with hair towards extremity, the 3rd moderate; frons smooth with tuft of scales, a ridge of scales between antennæ; eyes large, round; antennæ of male typically bipectinate with moderate branches to apex; thorax clothed almost entirely with scales, the pro- and metathorax with spreading crests; tibiæ moderately fringed with hair; abdomen with dorsal crest at base only; build slender. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. (*Balsa*). Antennæ of male bipectinate; fore wing with the areole normal.

4150. Balsa malana.

Brachytænia malana, Fitch, 1st & 2nd Rept. Ins. N. York, p. 244. pl. iii. f. 5 (1856); Smith, Cat. Noct. N. Am. p. 193; Staud. Cat. Lep. pal. p. 362.
Balsa obliquifera, Wlk. Can. Nat. & Geol. v. p. 251 (1860).
Nola leodura, Staud. Rom. Mém. iii. p. 178, pl. 10. f. 2 (1887).

Head and thorax blue-grey slightly mixed with brown; sides of

palpi and frons blackish; a black bar between antennæ which are pale rufous; a black line at middle of tegulæ and across base of patagia which have black scales near their upper edge; prothoracic crest blackish; pectus and legs whitish suffused with brown, the tarsi fuscous ringed with white; abdomen ochreous white irrorated with brown. Fore wing bluish white suffused with brown except on costal area, the veins of terminal half finely streaked with black; subbasal line curved, black, from costa to median nervure; antemedial line blackish slightly defined by whitish on inner side, incurved in cell, strongly angled inwards on vein 1 and outwards above inner margin; orbicular represented by a black point on a faint whitish mark, the reniform by an obliquely curved black discoidal line connected with an oblique wedge-shaped black mark from costa with whitish striga on it; a faint sinuous brown line from lower angle of cell to inner margin; postmedial line blackish, oblique and slightly sinuous to vein 6 where it is acutely angled, angled inwards in discal fold, outwards on veins 4, 3, then

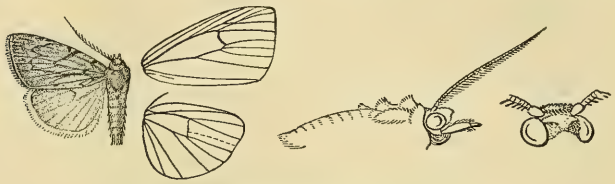


Fig. 128.—*Balsa malana*, ♂. ½.

strongly incurved and bent outwards at vein 1, some minute blackish streaks beyond it on costa; subterminal line very indistinct, whitish, excurved below vein 7 and at middle. Hind wing whitish suffused with reddish brown; cilia white with a faint red-brown line through them; the underside white irrorated with red-brown, a slight discoidal lunule and faint curved postmedial line.

Hab. Canada; U.S.A., Eastern and Central States, Massachusetts, Beverley (*Packard*), 1 ♂, 3 ♀, New York, Evans Center (*Grote*), 1 ♂, 3 ♀, Pennsylvania, Pittsburgh (*Engel*), 1 ♀, Wisconsin, Georgia, Kansas (*Snow*), 2 ♀; E. Siberia, Amurland, 1 ♀, Ussuri; Japan, Oiwake (*Pryer*), 1 ♂, 3 ♀. *Exp.* 28–34 millim.

Larva. Saunders, Ins. Inj. Fruits, p. 101.

Pale green with five white lines and numerous whitish dots. Food-plant: Apple, forming a tube of a leaf drawn together by silk to pupate in. 6.

Sect. II. (*Gargaza*). Antennæ of male laminate, simple; fore wing with the areole very small, narrow and elongate.

A. Fore wing tinged with red-brown, the veins with prominent dark streaks, the medial line strong towards costa ..... *tristrigella.*

B. Fore wing not tinged with red-brown, the veins with slight dark streaks, the medial line not strong towards costa ... *labecula.*

4151. Balsa tristrigella.

Gargaza tristrigella, Wlk. xxxv. 1734 (1865); Smith, Cat. Noct. N. Am. p. 193.
Asisyra zelleri, Grote, Bull. Buff. Soc. Nat. Sci. i. p. 169 (1873).

Head and thorax grey-white slightly tinged with brown; sides of palpi and frons blackish; a black bar between antennæ which are pale rufous; tegulæ with blackish band near tips; legs blackish, the tarsi slightly ringed with white; abdomen brownish white. Fore wing whitish suffused with pale red-brown, the veins with prominent dark streaks; subbasal line represented by a slight black striga from costa, the antemedial line by an oblique black striga from costa and point on median nervure; stigmata absent; slight black streaks beyond the cell above and below vein 5; postmedial line very indistinct, brown faintly defined by whitish

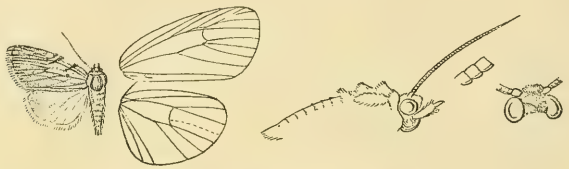


Fig. 129.—*Balsa tristrigella*, ♂. ½

on outer side, bent outwards below costa, then oblique and strongly dentate, some slight black streaks beyond it on costa; subterminal line absent; the interspaces of terminal area with slight black streaks; cilia whitish intersected with slight rufous streaks. Hind wing whitish tinged with pale red-brown; cilia white; the underside white irrorated with red-brown, a slight discoidal spot with oblique dark mark above it from costa, and faint curved postmedial line.

Hab. U.S.A., Massachusetts, New York (*Packard*, *Smith*), 2 ♂, 2 ♀, Schenectady (*Lintner*), 1 ♀, Texas; Hab. ign., 1 ♂ type. *Exp.* 28 millim.

4152. Balsa labecula. (Plate CXXXIV. fig. 2.)

Nolophana labecula, Grote, Can. Ent. xii. p. 217 (1880); Smith, Cat. Noct. N. Am. p. 194.

♀. Head and thorax bluish white slightly mixed with brown; palpi brownish at sides; frons with slight lateral brown bars; tegulæ with brown band at tips; tarsi blackish ringed with white; abdomen white slightly irrorated with black and with blackish dorsal marks on terminal segments. Fore wing bluish white slightly irrorated and suffused with brown, the veins with slight dark streaks; basal and subbasal black points on costa; antemedial line blackish, oblique from costa to middle of cell, then waved and strongly angled outwards above inner margin, traces of another oblique line beyond it on costal area; stigmata absent;

medial line oblique and blackish from costa to upper angle of cell, then faint, brownish, waved; a slight black streak beyond lower angle of cell; postmedial line blackish slightly defined by whitish on outer side, bent outwards below costa, very oblique and minutely dentate to vein 6, then more strongly dentate, strongly incurved below vein 3 and excurved below submedian fold, some blackish points beyond it on costa; subterminal line very faint, excurved below vein 7 and at middle, then incurved; a terminal series of blackish points. Hind wing white tinged with brown; a slight dark terminal line; cilia white; the underside white slightly irrorated with fuscous, a small blackish discoidal spot and indistinct curved postmedial line.

Hab. U.S.A., New York, Evans Center (*Grote*), 1 ♀, Wisconsin, 1 ♀ type. *Exp.* 32 millim.

Genus **MONODES.**

	Type.
Monodes, Guen. Noct. i. p. 240 (1852)	*nucicolora.*
Alpesa, Wlk. xv. 1662 (1858)	*villicosta.*

Proboscis fully developed; palpi upturned, rather slender, the 2nd joint reaching vertex of head, the 3rd moderate; frons smooth; eyes large, rounded; antennæ of male typically ciliated; build slender; head and thorax clothed chiefly with scales, the pro- and metathorax with typically slight spreading crests; tibiæ moderately fringed with hair; abdomen with dorsal crest at base only. Fore wing with the apex rounded, the termen evenly curved and hardly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male strongly serrate.

4153. **Monodes cuprescens**, n. sp.

Head and thorax whitish mixed with brown; sides of palpi and frons blackish; tarsi fuscous with slight pale rings; abdomen white faintly tinged with brown. Fore wing white largely suffused and irrorated with cupreous red-brown; subbasal line white, oblique, from costa to submedian fold; antemedial line brown defined by white on inner side, curved, minutely dentate below costa and angled

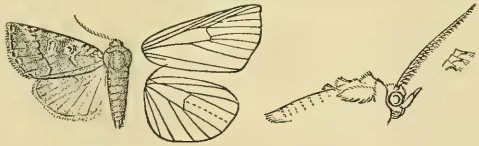


Fig. 130.—*Monodes cuprescens*, ♂. $\frac{3}{2}$.

inwards on vein 1; claviform faintly defined by white at extremity; orbicular whitish, undefined, round; reniform with white centre defined by brown and white annulus; a brown medial shade from costa to below cell; postmedial line brown defined by white on

outer side, very strongly bent outwards and angled below costa, then oblique, minutely waved, angled outwards on vein 1, some white points beyond it on costa; an oblique whitish shade from costa before apex; subterminal line very indistinct, whitish, from vein 7 to inner margin; a terminal series of small blackish spots defined by white lunules; a fine white line at base of cilia. Hind wing white tinged with pale brown; cilia white tinged with brown at base; the underside with the costal area tinged with brown; a fine dark terminal line.

Hab. Haiti (*Tweedie*), 2 ♂, 1 ♀ type. *Exp.* 24 millim.

Sect. II. Antennæ of male minutely serrate.

4154. Monodes deliriosa.

Celæna deliriosa, Wlk. xi. 731 (1857).
Cassandria poliotis, Hmpsn. A. M. N. H. (7) xiv. p. 170 (1904).

Head and thorax white slightly mixed with brown; tarsi with slight fuscous bands; abdomen grey-white. Fore wing white suffused with pale brown, except at base and on inner half of medial area; subbasal line double, the inner line black, the outer indistinct, oblique, from costa to submedian fold; antemedial line double, the inner line indistinct, oblique, sinuous, angled inwards on vein 1; claviform slightly defined by brown at extremity; orbicular and reniform defined by brown and with brownish centres; the former round, the latter rather diffused; a strong rather diffused oblique black medial line bent inwards to costa; postmedial line black, indistinctly double towards costa, oblique from costa to

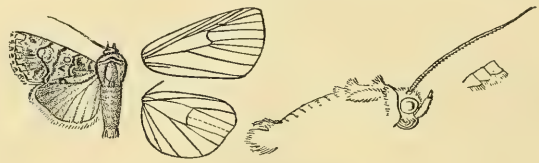


Fig. 131.—*Monodes deliriosa*, ♂. ½.

vein 5, then strongly incurved, excurved again at vein 1; subterminal line indistinct, white, excurvêd below vein 7 and at middle; a fine white line at base of cilia. Hind wing semihyaline white, the costal and terminal areas suffused with pale brown narrowing to a point at tornus; cilia white with a pale brown line through them on apical half; the underside with pale brown irroration on costal area and apical half of terminal area, a slight diffused dark mark on middle of costa.

Ab. 1. Fore wing with slight black streak in submedian fold, three fuscous patches before antemedial line, the medial line rufous.

Ab. 2. Fore wing with small black spots in claviform, orbicular, and reniform.

Ab. 3. Fore wing with strong black streak in submedian fold to

postmedial line, black spots in orbicular and reniform, the medial line rufous and obsolescent.

Hab. Bahamas, Nassau (*Sir G. Carter*), 2 ♂, 1 ♀ type *poliotis*; Haiti (*Tweedie*), 2 ♀ type. *Exp.* 28–30 millim.

Sect. III. Antennæ of male ciliated.

A. Fore tibiæ and tarsi of male fringed with long hair on outer side.

*4155. Monodes agyra.

Callopistria agyra, Druce, P. Z. S. 1890, p. 517, & Biol. Centr.-Am., Het. ii. p. 501, pl. 96. f. 6.

♂. Head and thorax red-brown mixed with reddish ochreous; tarsi blackish ringed with ochreous; abdomen red-brown mixed with ochreous. Fore wing bright red-brown mixed with some ochreous, the veins of costal area and the median nervure streaked with ochreous white; subbasal line double, black filled in with yellow, curved, from costa to vein 1, some yellowish beyond it in submedian interspace; antemedial line double filled in with yellowish, angled outwards below costa, then oblique, waved; claviform represented by an oblique yellowish-white streak from median nervure below orbicular to submedian fold near postmedial line; orbicular and reniform with pale yellow annuli slightly defined by black, the former small, oblique elliptical, the latter inwardly oblique, angled inwards on median nervure, and with small white spots in upper and lower parts; postmedial line black defined by

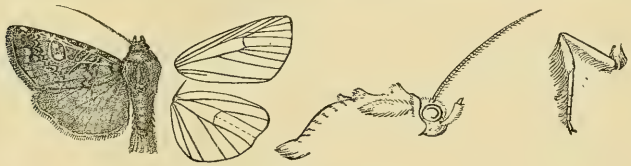


Fig. 132.—*Monodes agyra*, ♂. ¾.

yellow on outer side, strongly bent outwards below costa, then minutely dentate, oblique below vein 5, some yellow points beyond it on costa; subterminal line yellowish defined by brown on inner side, excurved below vein 7, excurved and minutely waved at middle; a fine terminal dark line; cilia with a fine yellowish line at base. Hind wing brown with a greyish tinge; a faint discoidal bar and curved postmedial line; cilia whitish with a brown line through them; the underside whitish irrorated with brown, the termen suffused with brown, a dark discoidal lunule and postmedial line excurved to vein 2, then incurved.

♀. Fore wing with broad yellowish-white costal fascia narrowing to apex, the interspaces towards costa tinged with rufous.

Hab. Panama, Chiriqui; Colombia, Minca (*H. H. Smith*). *Exp.* 28 millim.

B. Fore tibiæ and tarsi of male not fringed with long hair.

a. (*Alpesa*). Fore wing of male with fringe of very long hair from costa on upper side, except towards base and apex and recurved over the wing where it reaches to median nervure.

4156. Monodes villicosta.

Alpesa villicosta, Wlk. xv. 1663 (1858).

♂. Head and thorax rufous slightly mixed with brown; sides of palpi and frons fuscous; tarsi fuscous with pale rings; abdomen pale rufous. Fore wing glossy greyish rufous irrorated with silvery scales; antemedial line represented by a dark point on costa and indistinct oblique waved line from the fringe of hair to inner margin; a pale point at lower angle of cell; postmedial line represented by a dark point on costa and indistinct minutely waved line produced to black points on the veins from the fringe of hair to the inner margin, excurved to vein 4, then incurved; a faint dark subterminal line with series of black points on it, excurved below vein 7 and at middle; a terminal series of minute black points. Hind wing white, the

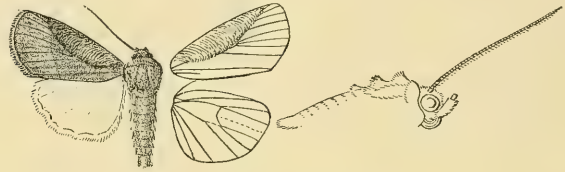


Fig. 133.—*Monodes villicosta*, ♂. ½.

costal area suffused with rufous; a fine dark waved terminal line from apex to below vein 2; cilia rufous at apex; the underside with the costal area suffused with rufous, a black discoidal point, curved postmedial series of points on the veins, and a terminal series from apex to vein 2.

♀. Head, thorax, and fore wing brighter rufous, the last with the lines entire, an indistinct waved subbasal line from costa to submedian fold, pale discoidal spot with some greyish suffusion before it, and fine pale line at base of cilia.

Hab. Panama, La Chorerra (*Dolby-Tyler*), 1 ♀; Brazil, Espiritu Santo, 1 ♂, Petropolis (*Doer*), 1 ♂, Organ Mts., Tijuca (*Wagner*), 4 ♂, Rio Janeiro (*Wilson*), 2 ♂. *Exp.* 32–36 millim.

b. Underside of fore wing of male clothed with rufous hair-like scales except on inner area, downturned below costa and upturned above submedian fold, with tufts of hair below base of costa and a fold in and beyond end of cell.

*a*¹. Fore wing with the postmedial line slightly bent outwards on inner area, the orbicular in male a curved black mark ..... *devara*.

*b*¹. Fore wing with the postmedial line strongly bent outwards on inner area, the orbicular in male a black streak ..... *barbarossa*.

4157. Monodes devara.

Eustrotia devara, Druce, Biol. Centr.-Am., Het. ii. p. 495, pl. 95. f. 15 (1898).

♂. Head and thorax purplish red-brown; palpi dark at sides, pale in front; tarsi fuscous ringed with white; abdomen fuscous brown. Fore wing purplish red-brown slightly tinged with fuscous especially towards costa; the veins slightly streaked with black; subbasal line indistinct, dark, bent outwards at median nervure and extending to inner margin; antemedial line near middle of wing, oblique, waved, with a slight oblique dark shade before it from cell to inner margin; claviform absent; orbicular represented by a narrow very oblique curved black mark defined by whitish above and below from subcostal nervure to the reniform which is small, defined by whitish and with black bar on its outer edge; an oblique sinuous medial line; postmedial line indistinctly double, filled in with pinkish and white towards costa, oblique

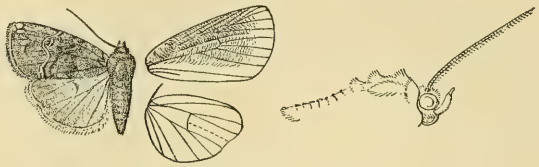


Fig. 134.—*Monodes devara*, ♂. $\frac{3}{2}$.

below costa, excurved to vein 5, then incurved and again excurved at submedian fold, some white points beyond it on costa; an oblique trifid yellow apical patch; subterminal line dark, rather indistinct, angled outwards at vein 7, excurved at middle and bent outwards to tornus; a slight dark terminal line; a fine white line at base of cilia. Hind wing greyish suffused with brown; a dark discoidal spot and fine white line at base of cilia, the underside grey irrorated with brown, the costal and terminal areas suffused with brown, a black discoidal spot and diffused postmedial line excurved to vein 4, then incurved.

♀. Fore wing with the orbicular more quadrate and less oblique.

Hab. Guatemala, Pantaleon (*Champion*), 1 ♀ type; Panama, Chiriqui (*Champion*), 1 ♀, Godman-Salvin Coll.; Jamaica (*Mrs. Swainson*), 1 ♀, Moneague (*Walsingham*), 1 ♂, Constant Springs (*Walsingham*), 1 ♀, Castleton (*Kaye*), 1 ♀. *Exp.* 22 millim.

4158. Monodes barbarossa, n. sp. (Plate CXXXIV. fig. 3.)

♂. Head and thorax purplish red-brown: palpi fuscous brown, whitish in front and at tips; lower part of frons whitish; pectus and legs fuscous brown, the tarsi ringed with white; abdomen greyish suffused with fuscous. Fore wing purplish red-brown, a diffused blackish wedge-shaped shade from apical half of termen to postmedial line at discal fold, the veins of inner half slightly irrorated with black; subbasal line dark, bent outwards at median

nervure and extending to vein 1; antemedial line almost medial, indistinctly double filled in with whitish towards costa, oblique, waved; claviform absent; orbicular an oblique black streak defined by whitish above and below, from subcostal nervure to the reniform which is small, oblique, with whitish annulus and its centre defined by fuscous, a short black streak beyond it; an oblique dark medial line; postmedial line double filled in with white, oblique towards costa, excurved to vein 5, then incurved and again excurved at submedian fold, with slight black streaks beyond it on veins 2 and 1 ending in white points and some minute white points on costa; an oblique wedge-shaped whitish apical patch crossed by two dark streaks; subterminal line hardly traceable, pale, slightly excurved below vein 7 and at middle; a slight dark terminal line with white points at the veins. Hind wing fuscous brown with a cupreous tinge; cilia whitish with a dark line near base; the underside whitish irrorated with fuscous, the terminal area suffused with fuscous, a black discoidal spot and postmedial rather diffused line, incurved below vein 4.

♀. Fore wing with the orbicular more quadrate.

Hab. Trinidad, Cuparo (*Kaye*), 1 ♂; Paraguay, Sapucay (*Foster*), 4 ♂, 11 ♀ type. *Exp.* 24–26 millim.

c. Fore wing on underside uniformly clothed with silky hair except the inner area.

4159. **Monodes vittifera**, n. sp. (Plate CXXXIV. fig. 4.)

♂. Head and tegulæ rufous; thorax red-brown; pectus, legs, and abdomen greyish suffused with red-brown. Fore wing silky red-brown with a yellowish patch on inner medial area; subbasal line double, curved, from costa to submedian fold; antemedial line double, oblique towards costa, then erect; claviform represented by a white point at its extremity; an oblique black medial line, bent inwards to inner margin; reniform indistinct, greyish, oblique elliptical; postmedial line black defined on outer side by grey, excurved round the reniform and approximated to the medial line below the cell; a small grey subapical spot with the wedge-shaped black mark before it with ochreous streak below it, and black lunule beyond it; a fine pale line at base of cilia. Hind wing whitish tinged with brown especially on apical area; the underside whitish, the costal area suffused with brown, an oblique brownish antemedial line, small black discoidal spot, and sinuous postmedial line.

♀. Fore wing with short black streak in cell before medial line.

Hab. Panama, Chiriqui (*Champion*), 1 ♀ type, Godman-Salvin Coll.; Colombia, Minca (*H. H. Smith*), ♂ in Coll. Druce; Brazil, Rio Janeiro, 1 ♂. *Exp.* ♂ 18, ♀ 20 millim.

d. Underside of both wings in male thickly clothed with fuscous scales.
  a^1. Fore wing with the orbicular a white point defined by blackish ..... *antica.*
  b^1. Fore wing with the orbicular dark with pale annulus.
    a^2. Fore wing grey suffused with brown, the orbicular and reniform prominently black ..... *fuscimacula.*

b^{2}. Fore wing red-brown, the orbicular and reniform slight, dark.
a^{3}. Fore wing with the postmedial line double filled with ochreous ..... *hyposcota*.
b^{3}. Fore wing with the postmedial line indistinct, dark..... *insipida*.

4160. **Monodes antica.**

Perigea antica, Wlk. x. 278 (1856).
Xylina detrecta, Druce, Biol. Centr.-Am., Het. i. p. 297 (part., nec Wlk.).
Perigea concisa, Druce, Biol. Centr.-Am., Het. ii. p. 481 (part., nec Wlk.).
Caradrina fuscimacula, Hmpsn. Trans. Ent. Soc. 1898, p. 246, subsp. 2 (nec Grote).

♂. Head and thorax rufous mixed with dark brown; palpi dark brown, pale at tips; tegulæ dark brown at base followed by a black medial line; pectus and legs dark brown, the tarsi with pale rings; abdomen dark brown, the base greyish. Fore wing red-brown with slight dark irroration; subbasal line indistinct, double, waved, from costa to submedian fold; antemedial line indistinct, double, waved, oblique; claviform defined by a few dark scales; orbicular a white point defined by dark scales;

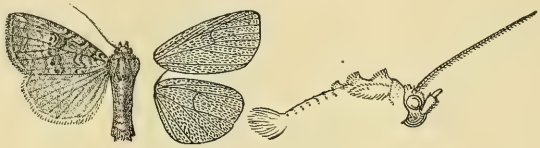


Fig. 135.—*Monodes antica*, ♂. $\frac{1}{1}$.

reniform a black bar defined by white and somewhat constricted at middle; a very indistinct medial line, oblique from costa to lower angle of cell, then incurved; postmedial line double, the outer line very indistinct except at costa and with series of black points beyond it on the veins, slightly bent outwards below costa, excurved to vein 4, then incurved, a series of pale points with blackish striæ between them beyond it on costa; subterminal line indistinct, pale, defined on inner side by brown, excurved below vein 7 and at middle; a terminal series of small black spots defined by slight pale lunules and with white points between them at the veins. Hind wing pale red-brown, the cilia with a fine white line at base. Underside of fore wing clothed with fuscous brown androconia to near termen; hind wing clothed with fuscous brown androconia to the curved postmedial line, the terminal area greyish irrorated with brown, a black discoidal spot and terminal series of points.

Hab. Mexico, Coatepec in Coll. U.S. Nat. Mus.; Guatemala, Irazu (*Rogers*), 1 ♂, 1 ♀; Costa Rica, Rio Sucio (*Rogers*), 2 ♂, Godman-Salvin Coll.; Venezuela (*Dyson*), 1 ♂ type. *Exp.* 30 millim.

4161. **Monodes fuscimacula.** (Plate CXXXIV. fig. 5.)

Hadena fuscimacula, Grote, Bull. Geol. Geog. Surv. Terr. vi. p. 262 (1881); Smith, Cat. Noct. N. Am. p. 151.

Head and thorax rufous mixed with greyish; tegulæ deep rufous at base, with dark medial line defined by whitish above: tarsi black ringed with white; abdomen greyish suffused with fuscous. Fore wing brownish grey irrorated with rufous, the medial area except towards costa and the terminal area except at apex suffused with rufous, the veins irrorated with black; subbasal line fuscous defined by greyish on outer side, bent outwards at median nervure and ending at submedian fold; antemedial line blackish defined by grey on inner side, slightly angled outwards below costa, then obliquely excurved; claviform absent; orbicular and reniform with black centres and grey annuli, undefined, the former very small, round, the latter narrow and constricted at middle; traces of a dark medial line oblique from costa to median nervure; postmedial line black defined by grey on outer side, bent outwards below costa, excurved to vein 5, then incurved; subterminal line greyish defined by rufous suffusion on inner side, slightly excurved below vein 7 and at middle, and bent outwards to tornus; a terminal series of black points with minute whitish points between them at the veins; cilia fuscous, greyish at tips. Hind wing greyish suffused with fuscous brown, the cilia whitish with a dark line through them; the underside greyish clothed with fuscous scales in male and with blackish discoidal spot and diffused postmedial line, in female greyer irrorated with fuscous.

Hab. U.S.A., Florida, Texas, 1 ♂, 1 ♀ type. *Exp.* 30 millim.

4162. **Monodes hyposcota**, n. sp. (Plate CXXXIV. fig. 6.)

Caradrina fuscimacula, Hmpsn. Trans. Ent. Soc. 1898, p. 246, subsp. 1 (nec Grote).

Head and thorax ochreous brown mixed with dark brown; palpi black, whitish at tips; pectus and legs blackish, the tarsi ringed with white; abdomen greyish tinged with fuscous, the anal tuft more ochreous. Fore wing ochreous tinged with rufous and irrorated with fuscous especially on medial and terminal areas; subbasal line indistinct, angled outwards below costa and ending at submedian fold, a diffused oblique dark shade beyond it from median nervure to inner margin; antemedial line indistinct, double, oblique, slightly sinuous; orbicular a minute pale annulus with dark centre, round; reniform very narrow, constricted at middle, with pale annulus slightly defined by fuscous, its centre defined by fuscous and its upper and lower parts filled in with black; an obliquely curved diffused dark medial shade; postmedial line double filled in with ochreous, bent outwards below costa, excurved to vein 5, then incurved, a double series of black points beyond it on the veins and some slight pale points on costa; subterminal line pale slightly defined by fuscous on inner side,

somewhat excurved below vein 7 and at middle and bent outwards to tornus; cilia fuscous with a slight pale line at base. Hind wing ochreous white tinged with brown; cilia whitish with a brown line near base except towards tornus; the underside whitish irrorated with fuscous and suffused with fuscous brown in male to beyond middle, a blackish discoidal spot and curved postmedial line.

Hab. Costa Rica, San José; St. Vincent (*H. H. Smith*), 1 ♀; Grenada, Mt. Gay (*H. H. Smith*), 3 ♂, 4 ♀ type; Peru, Trujillo. *Exp.* 22–28 millim.

*4163. Monodes insipida. (Plate CXXXIV. fig. 7.)

Oligia insipida, Dogn. Ann. Soc. Ent. Belge, xli. p. 409 (1897).

♂. Head and thorax grey-brown; tarsi with pale rings; abdomen brownish grey. Fore wing grey-brown with some darker irroration; an indistinct subbasal line from costa to submedian fold, defined by grey on inner side; an indistinct double antemedial line filled in with grey, oblique from costa to submedian fold where it is angled outwards; orbicular a small black spot with grey annulus; reniform obscurely defined by brown; postmedial line indistinct, bent outwards below costa to just beyond the reniform, then oblique with some brown suffusion on its inner side and a series of points on the veins beyond it; subterminal line very indistinct, greyish, angled outwards at vein 7 and excurved at middle; a terminal series of black points. Hind wing whitish tinged with brown especially towards apex; the underside whitish, tinged with brown on basal half, a terminal series of black points.

Hab. Ecuador, Loja, type † ♂ in Coll. Dognin. *Exp.* 20 millim.

e. (*Monodes*). Underside of both wings in male clothed with ferruginous hair at base.
  a^1. Fore wing with triangular dark brown patch on medial area from below costa to inner margin..... *deltoides.*
  b^1. Fore wing without triangular dark brown patch on medial area.
    a^2. Fore wing with the reniform a small lunule with dark marks before and beyond it ..... *nucicolora.*
    b^2. Fore wing with the reniform obsolete ..... *subrubens.*

4164. Monodes deltoides.

Erastria deltoides, Möschl. Verh. zool.-bot. Ges. Wien, xxx. p. 399 (1880).
Thalpochares harudes, Druce, Biol. Centr.-Am., Het. i. p. 314, pl. 29. f. 14 (1889).

Head and thorax bright red-brown; palpi and frons blackish at sides; tegulæ slightly tipped with grey; pectus and legs dark brown, the tarsi with slight pale rings; abdomen greyish suffused with fuscous. Fore wing pale red-brown irrorated with black, a large deep chocolate patch on medial area defined by white, its apex in end of cell, below the cell extending to the ante- and postmedial lines, the terminal area with a triangular patch of

red-brown suffusion from apex to above tornus, its apex near the angle of postmedial line; subbasal line very indistinct, double, bent outwards at median nervure and ending at vein 1; antemedial line double, filled in with white below the cell, bent inwards to costa, waved to median nervure, then inwardly oblique and bounding the medial patch; orbicular absent; reniform a minute oblique dark lunule defined by greyish and with small triangular black spot beyond it; postmedial line double filled in with white, oblique to vein 5, bent inwards to lower edge of reniform, then outwardly oblique and bounding the medial patch, some slight pale and dark points beyond it on costa; cilia white at base, dark brown at tips. Hind wing white faintly tinged with brown, the costa towards apex and termen slightly suffused with brown; a fine dark terminal line; cilia white, dark at tips on apical half; the inner margin with fiery-red hair in male. Underside of both wings suffused at base with fiery-red in male, on hind wing emitting streaks on costa, in and below cell and on inner area; the costal and terminal areas irrorated with brown, a dark discoidal lunule, indistinct waved postmedial line, and some black striæ on apical half of termen.

Hab. Mexico, Teapa (*H. H. Smith*), 2 ♂; Guatemala, Pantaleon (*Champion*), 1 ♂ type *harudes*; Costa Rica, Irazu (*Rogers*), 1 ♀; Panama, Chiriqui (*Champion*), 1 ♂, Godman-Salvin Coll., La Chorrera (*Dolby-Tyler*), 1 ♂; Jamaica (*Rendall*), 1 ♀, Constant Springs (*Walsingham*), 3 ♂, 2 ♀, Runaway Bay (*Walsingham*), 1 ♂; Cuba, Santiago (*Schaus*), 1 ♂; Dominica (*Elliott*), 1 ♂; Venezuela, 2 ♀; Fr. Guiana, St. Jean Maroni (*Schaus*), 1 ♂, 1 ♀; Brazil, Petropolis (*Doer*), 1 ♂; Paraguay, Sapucay (*Foster*), 2 ♂, 3 ♀. *Exp.* 22–24 millim.

4165. **Monodes nucicolora.**

Monodes nucicolora, Guen. Noct. i. p. 241, pl. 4. f. 9 (1852); Smith, Cat. Noct. N. Am. p. 151.
Laphygma unisignata, Wlk. ix. 189 (1856).
Hadena paginata, Morr. Proc. Ac. Nat. Sci. Phil. xxvii. p. 64 (1875).
Caradrina clara, Harv. Can. Ent. x. p. 57 (1878).

Head and thorax pale reddish mixed with fuscous; palpi with blackish patch on 2nd joint at sides; vertex of head whitish; tarsi with slight pale rings; abdomen ochreous white dorsally suffused with brown, ventrally with slight segmental dark lines. Fore wing grey suffused with red-brown, the costal area paler, the terminal area suffused with brown ending obliquely towards apex, the veins with slight black streaks; subbasal line indistinct, dark, angled outwards at median nervure and extending to vein 1; antemedial line double filled in with whitish, slightly angled outwards at the veins, oblique from costa to median nervure, then inwardly oblique; claviform and orbicular absent; reniform a narrow oblique whitish lunule with triangular blackish patch before it in cell and triangular spot beyond it; postmedial line double filled in with whitish, oblique

and very minutely waved from costa to vein 5, then bent inwards to lower extremity of reniform and oblique to inner margin near tornus; subterminal line absent; a slight whitish line at base of cilia. Hind wing pure white; the underside with the costal area and terminal area to vein 2 irrorated with brown, a black discoidal

Fig. 136.—*Monodes nucicolora*, ♂. ⅔.

point, punctiform postmedial line from costa to vein 2 with small black spots below costa and at discal fold, and black points on apical half of termen.

Hab. U.S.A., Florida (*Doubleday*), 1 ♂, 2 ♀, type and type *unisignata*, Enterprise, 2 ♂, 3 ♀, Texas, 1 ♂ type *clara*; Bahamas, Andros (*Bonhote*), 1 ♂, 1 ♀; Jamaica, Constant Springs (*Walsingham*), 2 ♂, Castleton (*Kaye*), 2 ♀; Brazil, Bahia (*Meade-Waldo*), 1 ♂; Peru, Trujillo. *Exp.* 22–28 millim.

4166. **Monodes subrubens.** (Plate CXXXIV. fig. 8.)

Miana subrubens, Guen. Noct. i. p. 219 (1852).

Head and thorax pale red-brown mixed with some fuscous; sides of palpi and frons blackish; pectus and legs bright rufous; abdomen greyish suffused with rufous. Fore wing greyish suffused and irrorated with brown, the costal area pale rufous, the veins irrorated with white and black, a triangular brown patch on medial area with its apex in end of cell, below the cell bounded by the ante- and postmedial lines; subbasal line very indistinct, double, bent outwards at median nervure and ending at vein 1; antemedial line double, oblique from costa to median nervure, then inwardly oblique; orbicular and reniform absent; postmedial line black defined by whitish on outer side except towards costa, oblique from costa to vein 5, then bent inwards to lower angle of cell and outwardly oblique to inner margin; subterminal line defined by dark suffusion on inner side, slightly angled outwards at vein 7 and excurved at middle; a series of minute white points at extremities of the veins; a fine white line at base of cilia. Hind wing white faintly tinged with brown, the inner margin clothed with fiery-red hair in the male; a fine dark terminal line on apical half; cilia mixed with brown at tips towards apex. Underside of fore wing with the base and costal area clothed with fiery-red hair in male; hind wing with the base, costal and inner areas clothed

with fiery-red hair in male, the costal and terminal areas irrorated with brown, a black discoidal spot and slight postmedial line from costa to vein 4.

Hab. Brazil; Paraguay, Sapucay (*Foster*), 3 ♂, 10 ♀; Peru, Trujillo. *Exp.* 24–26 millim.

f. Underside of hind wing in male clothed with rough scales.

*4167. Monodes punctula.

Semiophora punctula, Schaus, Pr. U.S. Nat. Mus. xxx. p. 103 (1906).

♂. Head, thorax, and abdomen red-brown. Fore wing red-brown with a faint greyish tinge and slight dark irroration; subbasal line indistinct, double, waved, from costa to submedian fold, with dark point beyond it above vein 1; antemedial line indistinct, double from costa to median nervure and with black point before it on vein 1, oblique, waved; orbicular and reniform slightly defined by black, and with slight whitish annuli, the former with fuscous centre, elliptical, the latter with its lower part filled in with fuscous; an indistinct, rather diffused waved medial line;

Fig. 137.—*Monodes punctula*, ♂. ½.

postmedial line bent outwards below costa, then minutely dentate and with double series of black points beyond it on the veins, incurved below vein 4; an indistinct pale subterminal line slightly defined by fuscous on inner side, excurved below vein 7 and at middle; a slight dark terminal line and fine whitish line at base of cilia. Hind wing dark reddish brown, the cilia whitish with brown line through them; the underside brown irrorated with grey, a dark discoidal lunule and rather diffused waved postmedial line.

Hab. Brazil, Castro Paraña in Coll. D. Jones. *Exp.* 24 millim.

g. Male without secondary sexual characters.
  a^1. Fore wing with the orbicular oblique and confluent with lower part of reniform.
    a^2. Fore wing with ochreous costal fascia and apical mark.
      a^3. Fore wing without dark mark on costal fascia before the apical mark.
        a^4. Fore wing with the reniform with white annulus defined by black ..... *conjugata*.
        b^4. Fore wing with the reniform almost obsolete . *fissistigma*.

b^3. Fore wing with dark mark on costal fascia before the apical mark ..... *albiviata.*
b^2. Fore wing with the costal fascia grey, the apical mark ochreous ..... *trifissa.*
b^1. Fore wing with the orbicular not confluent with lower part of reniform.
a^2. Fore wing with wedge-shaped black patch below end of cell and vein 4 to termen..... *plectilis.*
b^2. Fore wing without wedge shaped black patch below end of cell and vein 4.
a^3. Fore wing with black-brown fascia from middle of cell to apex ..... *atrisecta.*
b^3. Fore wing without black-brown fascia from middle of cell to apex.
a^4. Fore wing with dark streaks in interspaces of terminal area ..... *interstriata.*
b^4. Fore wing without dark streaks in interspaces of terminal area.
a^5. Fore wing with pale costal fascia.
a^6. Fore wing with the reniform represented by a slight blackish mark at lower angle of cell..... ..... *rubrisecta.*
b^6. Fore wing with the reniform lunulate.
a^7. Fore wing with small white spot above middle of vein 1 ..... *costagna.*
b^7. Fore wing without white spot above middle of vein 1.
a^8. Fore wing with oblique pale mark from apex.
a^9. Fore wing with the postmedial line not defined by white suffusion on outer side.
a^{10}. Hind wing without dark line through the cilia from apex to vein 2 ..... *monyma.*
b^{10}. Hind wing with dark line through the cilia from apex to vein 2..... *agrotina.*
b^9. Fore wing with the postmedial line defined by white suffusion on outer side.
a^{10}. Fore wing with the costal area ochreous white ..... *proleuca.*
b^{10}. Fore wing with the costal area ochreous tinged with rufous ..... *subobliqua.*
b^8. Fore wing without oblique pale mark from apex..... *jalapensis.*
b^5. Fore wing without pale costal fascia.
a^6. Fore wing with oblique pale mark from apex.
a^7. Fore wing with the orbicular not filled in with white.
a^8. Fore wing with blackish marks before and beyond reniform.
a^9. Fore wing with the apical mark yellow tinged with rufous ..... *versicolor.*
b^9. Fore wing with the apical mark pale brownish.
a^{10}. Fore wing purplish fuscous ..... *chalcedonia.*
b^{10}. Fore wing grey suffused with brown.
a^{11}. Fore wing with the terminal area concolorous ..... *festivoides.*

b^{11}. Fore wing with the terminal area suffused with black except at apex ..... *exesa.*

b^{8}. Fore wing without blackish marks before and beyond reniform.

a^{9}. Fore wing with the ground-colour red-brown.

a^{10}. Fore wing with the apical area not fuscous.

a^{11}. Fore wing with the postmedial line oblique from below costa to inner margin ..... *obliquirena.*

b^{11}. Fore wing with the postmedial line excurved from below costa to vein 5.

a^{12}. Fore wing with the reniform oblique *ensina.*

b^{12}. Fore wing with the reniform erect . *polysticta.*

b^{10}. Fore wing with the apical area fuscous..... *apicalis.*

b^{9}. Fore wing with the ground-colour greyish.

a^{10}. Fore wing with the terminal half black-brown ..... *pallescens.*

b^{10}. Fore wing with the terminal half rufous..... *hemipolia.*

c^{10}. Fore wing with blackish patches on terminal area above and below middle..... *phæopera.*

d^{10}. Fore wing with black patches beyond postmedial line on costa and at middle..... *niveiplaga.*

b^{7}. Fore wing with the orbicular filled in with white.

a^{8}. Fore wing with the orbicular round ..... *leucomela.*

b^{8}. Fore wing with the orbicular rather triangular.

a^{9}. Fore wing with the reniform not angled inwards on median nervure ..... *mastera.*

b^{9}. Fore wing with the reniform angled inwards on median nervure ..... *marmorata.*

c^{7}. Fore wing with the orbicular represented by an oblique rufous striga ..... *semirufa.*

d^{7}. Fore wing with the orbicular absent.

a^{8}. Fore wing with the reniform oblique.

a^{9}. Fore wing wholly suffused with brown . *repanda.*

b^{9}. Fore wing mostly white.

a^{10}. Fore wing with the basal area brown and black ..... *basistigma.*

b^{10}. Fore wing with the basal area white. . *hemileuca.*

b^{8}. Fore wing with the reniform erect.

a^{9}. Fore wing with black spot in lower extremity of cell before the reniform ... *venustula.*

b^{9}. Fore wing without black spot in lower extremity of cell before the reniform.

a^{10}. Fore wing red-brown, the inner and postmedial areas whitish ..... *phæoplaga.*

b^{10}. Fore wing violaceous grey, the basal costal area and medial and terminal areas except towards inner margin tinged with olive ..... *chlorozona.*

b^6. Fore wing without oblique pale mark from apex.
a^7. Fore wing without ante- and postmedial wedge-shaped black patches from costa.
a^8. Fore wing without medial wedge-shaped black patch from costa.
a^9. Fore wing with the orbicular pure white.
a^{10}. Fore wing with the orbicular an oblique white striga ..... *bertha.*
b^{10}. Fore wing with the orbicular narrow, oblique elliptical.
a^{11}. Fore wing with the reniform oblique. *sanctanna.*
b^{11}. Fore wing with the reniform erect.
a^{12}. Fore wing with some pink suffusion on medial area ..... *rubripicta.*
b^{12}. Fore wing without pink suffusion on medial area.
a^{13}. Fore wing red-brown ..... *leucostigma.*
b^{13}. Fore wing ochreous white suffused in parts with brown ..... *algama.*
c^{10}. Fore wing with the orbicular a small round point or spot.
a^{11}. Fore wing with the cell filled in with black on medial area ..... *pulchra.*
b^{11}. Fore wing with the cell not filled in with black on medial area.
a^{12}. Fore wing tinged with olive.
a^{13}. Fore wing with the reniform not constricted at middle ..... *orbiculata.*
b^{13}. Fore wing with the reniform constricted at middle ..... *chionopis.*
b^{12}. Fore wing red-brown.
a^{13}. Fore wing with the reniform lunulate ..... *thoracica.*
b^{13}. Fore wing with the reniform bar-shaped ..... *castrensis.*
c^{12}. Fore wing bluish grey ..... *cenicienta.*
b^9. Fore wing with the orbicular yellowish white.
a^{10}. Fore wing with the reniform yellowish white, round ..... *stelligera.*
b^{10}. Fore wing with the reniform greyish.
a^{11}. Fore wing with the reniform erect, lunulate ..... *mesomela.*
b^{11}. Fore wing with the reniform oblique elliptical ..... *cadema.*
c^9. Fore wing with the orbicular orange-yellow ..... *flaviorbis.*
d^9. Fore wing with brownish centre to orbicular.
a^{10}. Fore wing with oblique white streak on medial area below the cell, representing upper edge of claviform ... *callopistrica.*
b^{10}. Fore wing without oblique white streak on medial area below the cell.
a^{11}. Fore wing with white streak on median nervure on medial area..... *acaste.*

b^{11}. Fore wing without white streak on median nervure on medial area.
a^{12}. Fore wing with the medial area white below submedian fold ..... *langia.*
b^{12}. Fore wing with the medial area not white below submedian fold.
a^{13}. Fore wing with the veins not streaked with white.
a^{14}. Fore wing without blackish streak on medial area in submedian fold.
a^{15}. Fore wing without black patch between orbicular and reniform.
a^{16}. Fore wing with two white points at upper extremity of reniform ..... *bastula.*
b^{16}. Fore wing without white points at upper extremity of reniform.
a^{17}. Hind wing entirely suffused with brown.
a^{18}. Fore wing red-brown ..... *tenebrosa.*
b^{18}. Fore wing grey-brown suffused with fuscous..... *stygiata.*
c^{18}. Fore wing grey tinged with purplish ..... *hæmassa.*
b^{17}. Hind wing white, the terminal area suffused with brown.
a^{18}. Fore wing with the postmedial line dentate ..... *miochroa.*
b^{18}. Fore wing with the postmedial line not dentate.
a^{19}. Fore wing reddish brown.
a^{20}. Fore wing with the antemedial line oblique throughout..... *grata.*
b^{20}. Fore wing with the antemedial line oblique to median nervure, then erect.
a^{21}. Fore wing with the postmedial line incurved below vein 4..... *stenonephra.*
b^{21}. Fore wing with the postmedial line incurved below vein 6 .... *lentilinea.*
b^{19}. Fore wing violaceous white suffused with reddish brown ..... *targa.*
b^{15}. Fore wing with black patch between orbicular and reniform ..... *atrisigna.*
b^{14}. Fore wing with blackish streak on medial area in submedian fold . *jonea.*
b^{13}. Fore wing with the veins streaked with white ..... *editha.*
c^{9}. Fore wing with the orbicular represented by a black bar on its outer edge.
a^{10}. Fore wing with the reniform an oblique whitish patch defined by black on inner side and below ..... *lithodia.*

*b*10. Fore wing with the reniform erect, brown defined by black at sides ..... *thionaris.*
*f*9. Fore wing with the orbicular absent.
*a*10. Fore wing with the ante- and postmedial areas green ..... *virescens.*
*b*10. Fore wing dark brown, the apical area red-brown ..... *stenelea.*
*b*8. Fore wing with oblique medial wedge-shaped black patch from costa ..... *costipuncta.*
*b*7. Fore wing with ante- and postmedial oblique wedge-shaped black patches from costa ..... *ditrigona.*

4168. **Monodes conjugata.** (Plate CXXXIV. fig. 9.)

Hydrelia conjugata, Moore, P. Z. S. 1881, p. 369; Hmpsn. Moths Ind. ii. p. 514.
Eurois albicostata, Hmpsn. Moths Ind. ii. p. 228 (1894).

Palpi and frons dark brown; vertex of head and tegulæ brownish ochreous, the latter tipped with black; thorax dark brown, the patagia ochreous at base, the vertex of thorax with some ochreous; abdomen ochreous white suffused with brown except at base. Fore wing with the costal area broadly ochreous, narrowing to apex, with the costal edge dark, and slight brownish streaks in the interspaces beyond the cell, the inner area rufous tinged with greyish fuscous, the terminal area fuscous brown except at inner margin; a diffused blackish streak on base of median nervure; antemedial line double, excurved, from the ochreous costal area to inner margin; orbicular and reniform with ochreous centres tinged with fuscous and white, defined by black, open above, the former very narrow and oblique, its lower extremity confluent with the latter which extends to well below the cell and has its outer edge strongly indented; an oblique ochreous streak defined by black and with brownish centre from lower edge of orbicular to submedian fold at postmedial line, which is indistinct, double, oblique from vein 6 to inner margin, angled outwards at vein 1; some ochreous points on terminal part of costa; a terminal series of slight black striæ with ochreous points and striæ on their inner side; cilia fuscous with slight pale line at base. Hind wing whitish tinged with fuscous brown especially in female; a faint dark discoidal lunule; a terminal series of dark striæ; cilia brownish white with a slight dark line through them; the underside ochreous white irrorated with brown, thickly on costal area, a large black discoidal lunule, diffused waved postmedial line, and terminal series of small black lunules.

Hab. Punjab, Simla (*Harford*), 1 ♂, 1 ♀ type *albicostata*; Sikhim. *Exp.* 24–28 millim. Type † in Mus. Berlin.

4169. **Monodes fissistigma.** (Plate CXXXIV. fig. 10.)

Xanthoptera fissistigma, Hmpsn. J. Bomb. Nat. Hist. Soc. xi. p. 446 (1898).

Head and thorax yellowish white slightly mixed with rufous;

palpi red-brown at sides; antennæ brown; pectus and legs brownish; abdomen ochreous white tinged with brown. Fore wing pale yellow tinged in parts with red, the inner half of medial area whitish; subbasal line brownish, indistinct and double to median nervure, then single and incurved to inner margin; antemedial line indistinct, double, very oblique from costa to submedian fold where it is acutely angled outwards to a dark point, then bent inwards to inner margin and with two dark points before it on vein 1; orbicular white slightly defined by black, oblique elliptical, its lower extremity produced to a short streak on median nervure and a longer curved streak below the cell with a black streak from its extremity to termen below vein 5 and defined below by a curved white patch; reniform almost obsolete; traces of a waved dark medial line oblique from costa to lower angle of cell; postmedial line slight, strongly bent outwards below costa, incurved and double below vein 4 and slightly excurved at vein 1; subterminal line represented by a slight dark mark on costa and two slight obliquely placed dark lunules below veins 4 and 3; a wedge-shaped brownish shade from termen below apex above the black streak; a terminal series of prominent black points; cilia slightly intersected with blackish. Hind wing ochreous white with traces of a curved postmedial line; the underside with the costal area slightly irrorated with brown, a blackish discoidal spot and indistinct curved waved postmedial line.

Hab. Assam, Khásis, 1 ♂, 1 ♀ type. *Exp.* ♂ 26, ♀ 30 millim.

4170. **Monodes albiviata**, n. sp. (Plate CXXXIV. fig. 11.)

♂. Head and thorax whitish mixed with some brown; palpi brownish; antennæ ringed with brown; tarsi brown with pale rings; abdomen ochreous white. Fore wing ochreous white, the basal area and costal area to near apex suffused with brown, a broad oblique yellowish fascia from apex to lower angle of cell, with a triangular brown patch below it extending to near tornus; an indistinct curved brown subbasal line from costa to submedian fold in which there is a short black streak; orbicular with white annulus slightly defined by brown, rather oblique elliptical, with curved white streak from its lower extremity below end of cell; some dark brown beyond it in cell; reniform absent; postmedial line almost obsolete and bent outwards below costa, double, minutely waved and incurved from the oblique fascia to inner margin, some white points beyond it on costa; subterminal line represented by slight white lunules with small dentate black marks on their inner side between veins 6 and 2, the lowest larger and extending to termen; a terminal series of minute black lunules; cilia with a fine pale line at base. Hind wing white with fine brown terminal line; the underside tinged with ochreous, a short

blackish streak in middle of cell, discoidal lunule and terminal series of minute lunules.

Hab. W. China, Chang-Yang (*Pratt*), 1 ♂ type. *Exp.* 30 millim.

4171. **Monodes trifissa**, n. sp. (Plate CXXXIV. fig. 12.)

Eurois albicostata, Hmpsn. Moths Ind. ii. p. 228 (part).

♀. Head and thorax ochreous white tinged with rufous, the extremity of patagia with some black scales and the metathoracic crest blackish; pectus and legs suffused with fuscous brown; abdomen ochreous suffused with brown, the basal crest fuscous. Fore wing with the base and costal area to just beyond postmedial line grey slightly irrorated with black, the inner area and a broad curved fascia from end of cell to apex ochreous, the cell and area beyond its lower extremity rufous and the medial part of terminal area grey with slight dark streaks on the veins and in interspaces; subbasal line represented by a slight oblique black striga from costa; antemedial line absent; orbicular white with an ochreous tinge in centre and slightly defined by brown at sides, narrow, very oblique, its lower extremity produced to three oblique white streaks with a bar across their extremities below the reniform which is represented by a very slight ochreous lunule; an oblique ochreous streak from below the orbicular to submedian fold at postmedial line, which is very indistinct and double from costa to vein 3, strongly bent outwards below costa, bent inwards at vein 3 and sinuous to inner margin; a terminal series of black points. Hind wing greyish wholly suffused with fuscous brown; the underside ochreous irrorated with fuscous, a blackish discoidal spot, curved waved postmedial line, and terminal series of striæ.

Hab. Punjab, Simla (*Harford*), 1 ♀ type. *Exp.* 24 millim.

*4172. **Monodes plectilis.** (Plate CXXXIV. fig. 13.)

Axylia plectilis, Guen. Noct. i. p. 135 (1852).

♂. Head, thorax, and abdomen pale brown. Fore wing pale brown; the veins with fine dark streaks; a black streak in submedian fold from base to middle of wing; a wedge-shaped leaden-fuscous patch below the cell and vein 4 from middle of cell to termen towards which it expands; orbicular and reniform minute, with brown centres and whitish annuli defined by black, a black streak between them in lower part of cell; a rufous streak from reniform to termen and another below the leaden-fuscous patch. Hind wing white; cilia brown at middle and at tips towards apex.

Hab. Sierra Leone, type † ♂ in Coll. Oberthür. *Exp.* 26 millim.

4173. **Monodes atrisecta**, n. sp. (Plate CXXXIV. fig. 14.)

♀. Head and thorax rufous mixed with whitish; palpi with some black; lower part of frons white; tegulæ with dorsal black bar near base and brown line near tips; abdomen brown, the anal tuft white, the ventral surface white with sublateral dark streak. Fore wing ochreous white suffused with rufous and slightly irrorated with brown, the veins slightly streaked with brown; a black-brown fascia in discal fold from middle of cell where it narrows to a point, curved upwards to termen below apex; subbasal line represented by slight double oblique dark striæ from costa and single striga from cell with brown mark below it on inner margin; antemedial line obsolescent towards costa, inwardly oblique and waved below the cell with brown band before it defined by whitish on inner side; claviform whitish defined by black, very narrow and elongate; orbicular a very oblique white striga; reniform a small round white spot defined by black and with brown line on it near inner edge; a slight oblique sinuous rufous line from lower angle of cell to inner margin; postmedial line double at costa, strongly bent outwards and almost obsolete below costa, then reduced to black points in the interspaces and very oblique to submedian fold, then continuous, slightly excurved at vein 1 and with black and whitish points beyond it on veins 3, 2, 1; traces of a pale sinuous subterminal line; a terminal series of black striæ with white points at the veins; cilia intersected with dark brown. Hind wing ochreous brown; cilia white with a brownish line near base; the underside white, the costal and terminal areas tinged with rufous and irrorated with brown, a blackish discoidal spot, minutely waved postmedial line, and terminal series of black lunules.

Hab. Brazil, Rio Janeiro (*Wilson*), 1 ♀ type. *Exp.* 28 millim.

4174. **Monodes interstriata**, n. sp. (Plate CXXXIV. fig. 15.)

♀. Head whitish mixed with some brown; palpi with the 2nd joint at sides and 3rd joint in front blackish; antennæ brown; thorax pale ochreous mixed with brown; tarsi fuscous with pale rings; abdomen ochreous white. Fore wing pale ochreous, the costal area irrorated with brown, the veins and interspaces of terminal half streaked with brown; orbicular and reniform small defined by brown except above, the former with brown point in centre, round, the latter with brown points in upper and lower parts, constricted at middle, some dark brown suffusion between them in cell; postmedial line represented by two dark striæ from costa, bent outwards and obsolescent below costa, then with double series of minute dark points, oblique below vein 4; the terminal area tinged with red-brown except at apex; a terminal series of dark points. Hind wing whitish, the terminal area tinged with brown from apex to vein 2; the underside with the costal area and terminal area to vein 2 irrorated with brown, traces of a minute discoidal lunule.

Hab. Paraguay, Sapucay (*Foster*), 1 ♀ type. *Exp.* 30 millim.

4175. **Monodes rubrisecta**, n. sp. (Plate CXXXIV. fig. 16.)

Head, thorax, and abdomen tinged with red-brown. Fore wing ochreous tinged with red-brown; a triangular red-brown shade from termen from apex to submedian fold to below angle of cell with rather darker fascia on its upper edge; a double curved antemedial series of black points; a small blackish spot at lower angle of cell; a double postmedial series of black points bent outwards below costa, excurved to vein 4, then oblique; the veins from apex to upper angle of cell with pale streaks; a terminal series of black striæ; cilia dark brown with a pale line at middle. Hind wing yellowish white, the apical area faintly tinged with brown; a fine brown terminal line from apex to submedian fold; the underside with the costal area irrorated with brown, a blackish discoidal striga and postmedial line from costa to vein 5.

Hab. Brazil, Rio Janeiro (*Doer*), 2 ♂, 1 ♀ type. *Exp.* 22 millim.

4176. **Monodes costagna.** (Plate CXXXIV. fig. 17.)

Thalpochares costagna, Schaus, Trans. Am. Ent. Soc. xxx. p. 161 (1904).

♂. Head, tegulæ, and vertex of thorax red-brown; patagia pale ochreous yellow; pectus, legs, and abdomen red-brown mixed with ochreous. Fore wing with the costal half from inner margin near base to apex pale ochreous yellow tinged with rufous especially towards apex, its lower edge rather sinuous, the rest of wing red-brown mixed with greyish; the costal edge black towards base; antemedial line represented by slight oblique brown striæ from costa and cell and a curved white line on the brown inner area; a small white spot above middle of vein 1; reniform very small and narrow, its lower part with slight whitish annulus; veins 2 and 3 with slight pale streaks beyond the cell, the latter with white streak on postmedial area; postmedial line represented by a slight brown striga from costa and an incurved white line from vein 5 to inner margin with black points beyond it on the veins; subterminal line whitish on costal area, then represented by brown suffusion on inner side, incurved at discal fold and below vein 3; a terminal series of black striæ with slight pale striæ before them; cilia with a fine pale line at base. Hind wing white, the termen slightly tinged with red-brown from apex to vein 4; a slight discoidal lunule; a fine brown terminal line from apex to submedian fold; cilia with a brown line through them; the underside with the costal area and terminal area to vein 3 irrorated with red-brown, a small discoidal lunule and rather diffused curved postmedial line.

Hab. Brazil, São Paulo (*D. Jones*), type † ♂ in U.S. Nat. Mus. *Exp.* 20 millim.

4177. Monodes monyma.

Monodes monyma, Druce, Biol. Centr.-Am., Het. i. p. 280, pl. 27. f. 8 (1889).

Head and thorax pale yellow tinged in parts with rufous; palpi with the 2nd joint fuscous at sides; legs tinged with fuscous, the tarsi slightly ringed with white; abdomen whitish tinged with brown. Fore wing pale yellow, some rufous suffusion on inner area before the antemedial line and on medial area in, beyond and below cell and on inner area, the terminal area fuscous brown with rounded pale yellow apical patch; antemedial line represented by two slight brown striæ from costa and an indistinct double inwardly oblique line from cell to inner margin; orbicular hardly traceable, very faintly defined by brown, round; reniform small, defined by brown except above, rather oblique elliptical; a rather diffused red-brown medial line, oblique from costa to lower angle of cell; postmedial line brown defined by yellow on outer side, oblique from costa to vein 6, then incurved and excurved in submedian interspace, some pale points with brown streaks between them beyond it on costa; subterminal line very faint, pale, from the apical patch to inner margin, angled outwards at vein 4 and bent outwards to tornus; a slight dark terminal line; a fine pale line at base of cilia. Hind wing pure white; the underside with the costal area tinged with ochreous, a slight dark terminal line on apical half.

Hab. Mexico, Presidio (*Forrer*), 1 ♂; Panama, Chiriqui (*Champion*), 1 ♂, 1 ♀ type, Godman-Salvin Coll. *Exp.* 24–26 millim.

4178. Monodes agrotina. (Plate CXXXIV. fig. 18.)

Celæna agrotina, Guen. Noct. i. p. 221 (1852).
Laphygma trientiplaga, Wlk. xv. 1677 (1858); Dyar, Cat. Lep. N. Am. p. 112.
Celæno guttula, Herr.-Schäff. Zool.-min. Corresp.-blatt. Regensb. xxii. p. 154 (1868).
Celæno arnoides, Herr.-Schäff. Zool.-min. Corresp.-blatt. Regensb. xxii. p. 154 (1868).
Hadena aduncula, Feld. Reis. Nov. pl. 110. f. 4 (1874).

Head and basal half of tegulæ dark brown; palpi with ochreous ring at extremity of 2nd joint; tips of tegulæ and thorax ochreous mixed with reddish brown; tarsi blackish ringed with ochreous; abdomen ochreous dorsally suffused with dark brown, ventrally irrorated with brown. Fore wing ochreous suffused with dark red-brown, the basal area and the costal half to medial line ochreous irrorated with red-brown; subbasal line dark, angled inwards in cell, outwards on median nervure and ending at vein 1; a triangular dark shade before the antemedial line from median nervure to inner margin; antemedial line double, angled outwards below costa, then oblique, waved; claviform a small elongate ochreous white mark; orbicular and reniform small with pale brown centres and ochreous annuli defined by blackish, the former somewhat elongate elliptical, the latter narrow; an oblique slightly sinuous medial line; post-

medial line black slightly defined by whitish on outer side, especially towards costa where it is double, oblique below costa, then forming outer edge of reniform, outwardly oblique below vein 2, some ochreous points beyond it on costa; an apical ochreous patch with black point at apex; subterminal line represented by slight dark streaks in the interspaces; a terminal series of black points; cilia with a fine pale line at base. Hind wing semihyaline whitish tinged with brown, the costal area and termen to vein 2 suffused with brown; cilia with a fine pale line at base; the underside with the costal area irrorated with brown, a small black discoidal spot and postmedial series of minute points on the veins from costa to vein 3.

Hab. U.S.A., Florida; Mexico, Coatepec (*Schaus*), 1 ♂; Jamaica, Constant Springs (*Walsingham*), 2 ♂; Cuba, Tanamo (*Schaus*), 1 ♂, 1 ♀, Baracoa (*Schaus*), 1 ♀; Venezuela (*Dyson*), 1 ♂; Brazil, Amazons, Breves (*Austen*), 1 ♀, R. Jutahi (*Trail*), 1 ♂, 1 ♀; Paraguay, Sapucay (*Foster*), 4 ♀. *Exp.* 22–24 millim.

4179. **Monodes proleuca**, n. sp. (Plate CXXXIV. fig. 19.)

♂. Head and thorax white, the head and tegulæ tinged with rufous, the latter with triangular black spot at middle; legs tinged with rufous; abdomen white dorsally suffused with fuscous, the anal tuft tinged with rufous. Fore wing white with triangular red-brown patch before the postmedial line from beyond upper angle of cell to inner margin near base, the terminal area with triangular brown patch extending from below apex to tornus and to postmedial line at vein 6, the costa tinged with rufous except at apex; no trace of subbasal and antemedial lines; claviform small, narrow, white defined by black; orbicular absent; reniform very small, narrow and oblique, with brownish centre and white annulus open above; postmedial line double, pale brown filled in with white, with two brown points at costa, very indistinct and oblique to vein 6, then incurved; a curved white fascia from apex; subterminal line represented by slight dentate black marks on the terminal brown patch. Hind wing whitish tinged with brown, the veins and terminal area suffused with brown; a slight discoidal point; cilia white; the underside white irrorated with brown, a black discoidal spot and traces of a waved postmedial line and diffused subterminal band.

Hab. Bahamas, Nassau (*Sir G. Carter*), 1 ♂ type. *Exp.* 22 millim.

4180. **Monodes subobliqua.** (Plate CXXXIV. fig. 20.)

Celæna subobliqua, Wlk. xv. 1690 (1858).
Callopistria vittata, Wlk. xxxiii. 811 (1865).
Celæno trapezoides, Herr.-Schäff. Zool.-min. Corresp.-blatt. Regensb. xxii. p. 153 (1868).
Alibama mutata, Möschl. Abh. Senck. Ges. xiv. p. 44, ff. 5, 5 *a* (1886); Druce, Biol. Centr.-Am., Het. i. p. 295.

♂. Head and thorax ochreous mixed with red-brown; palpi with the 2nd joint black at sides; frons with black bar; tegulæ with dark lines at middle and tips; metathoracic crest blackish tipped with grey; abdomen ochreous white irrorated with brown, sublateral series of small black spots except towards base, the anal tuft black-brown below. Fore wing red-brown, a broad costal ochreous fascia suffused with rufous, extending at base to inner margin and narrowing suddenly to apex; subbasal line represented by a slight dark striga from costa and some dark scales below cell; antemedial line represented by two dark striæ from costa, a black point in cell and white line from cell to inner margin, incurved in submedian interspace, then excurved, an oblique fascia of black scales before it on inner area; claviform a small elongate pure white mark; orbicular absent; reniform very small, narrow and oblique, white with red-brown bar in centre; a waved blackish medial line except on costal area; postmedial line represented by two blackish spots on costa, then by minute black streaks on the ochreous area bent outwards below costa, on the brown area slight, double, filled in with pure white and with broad diffused band of white beyond it, incurved to submedian fold, then slightly sinuous and outwardly oblique, some slight brown marks beyond it on costa; an oblique irregular ochreous apical patch with brown point on costa; subterminal line represented at middle by small dentate black marks in the interspaces with some ochreous scales on their outer side, on inner area by a whitish line bent outwards to tornus; a terminal series of minute black lunules slightly defined by ochreous on inner side and with white points at extremities of the veins; cilia black-brown with fine pale line at base. Hind wing ochreous white, the inner and terminal areas broadly suffused with brown; a slight black discoidal lunule; cilia white with a dark line through them; the underside ochreous white, the costal and terminal areas irrorated with brown, a black discoidal lunule, crenulate postmedial line, and slight waved subterminal line with blackish spot at discal fold.

♀. Hind wing wholly suffused with brown.

Hab. Mexico, Coatepec (*Schaus*), 1 ♀, Jalapa (*Trujillo*), 1 ♀; Guatemala, Las Mercedes (*Champion*), 1 ♀, Vera Paz (*Champion*), 1 ♀, San Isidro (*Champion*), 1 ♀; Panama, Chiriqui (*Champion*), 1 ♀, Godman-Salvin Coll.; Jamaica (*Kaye*), 1 ♀; Cuba, Santiago (*Schaus*), 2 ♂, 1 ♀, Baracoa (*Schaus*), 1 ♂, Tanamo (*Schaus*), 1 ♀; Venezuela, Aroa, 2 ♂, 1 ♀; Br. Guiana, Potaro R. (*Kaye*), 1 ♀; Brazil, Organ Mts., Tijuca (*Wagner*), 1 ♀, São Paulo (*D. Jones*), 1 ♂, 1 ♀; Paraguay, Sapucay (*Foster*), 1 ♂, 2 ♀. *Exp.* 24–28 millim.

4181. Monodes jalapensis.

Acontia jalapensis, Schaus, Trans. Am. Ent. Soc. xxi. p. 239 (1894).
Acontia darpa, Druce, Biol. Centr.-Am., Het. ii. p. 493, pl. 95. f. 5 (1898).

Head and thorax dark reddish brown mixed with grey; palpi

blackish, white on inner side; frons blackish at sides; tegulæ tipped with whitish; tarsi brown with slight whitish rings; abdomen grey suffused with fuscous brown, the anal tuft ochreous. Fore wing grey suffused and irrorated with fuscous brown, the cell and area below it to submedian fold brown, the termen tinged with brown, the costal area to subterminal line white tinged with ochreous; subbasal line represented by a brown striga from cell; antemedial line indistinct, oblique, very minutely waved, from the costal fascia to inner margin; orbicular and reniform purplish grey defined by brown and with faint dark centres, the former round; a diffused brown medial line from costal fascia to inner margin, slightly incurved at median nervure, then very oblique to inner margin near postmedial line, which is double, the outer line indistinct, from costal fascia to inner margin, very minutely waved, slightly incurved below vein 5, then somewhat oblique to near tornus; a very indistinct dark minutely waved subterminal line; a fine white line at base of cilia. Hind wing white, the veins, inner and terminal areas suffused with brown; a small discoidal spot; cilia white with brownish tips towards apex; the underside white, the costal and terminal areas irrorated with brown, a black discoidal spot with fuscous mark above it on costa, and minutely waved postmedial line with slight dark spots at discal and submedian folds.

Hab. Mexico, Jalapa (*Schaus*, *Trujillo*), 5 ♂, 2 ♀, type *darpa*, Godman-Salvin Coll. *Exp.* 30 millim. Type † in U.S. Nat. Mus.

4182. **Monodes versicolora.** (Plate CXXXIV. fig. 21.)

Hadena versicolor, Grote, Proc. Ac. Nat. Sci. Phil. 1874, p. 204; id. Can. Ent. vii. pl. 1. f. 11; Smith, Cat. Noct. N. Am. p. 150.

♂. Head and thorax fuscous brown mixed with grey; tarsi ringed with white; abdomen greyish suffused with brown. Fore wing dull purplish pink, irrorated with brown and suffused with fuscous between the antemedial and subterminal lines, except on inner area which is suffused with whitish, the veins irrorated with white scales; subbasal line represented by slight dark striæ from costa and median nervure defined by whitish on outer side; antemedial line indistinct, oblique, waved, with patch of fuscous and white scales before it on inner area; orbicular and reniform small, indistinctly defined by brown, the former round, the latter with triangular black patch before it in cell and triangular spot beyond it; an indistinct waved dark medial line; postmedial line defined by white on outer side, strongly towards costa and on inner area and with short black streaks beyond it on the veins, excurved from below costa to vein 5, then incurved to lower extremity of reniform and rather outwardly oblique and sinuous to inner margin, some white points beyond it on costa; an oblique ochreous patch tinged with rufous from apex; subterminal line defined by the contrast between the dark and pinkish areas, excurved at middle and strongly angled inwards at discal and submedian folds; a terminal

series of small dark spots defined by slight pale lunules; cilia with a fine whitish line at base. Hind wing grey suffused with pale brown; cilia whitish with a slight brown line through them; the underside whitish irrorated with brown, a blackish discoidal spot and curved postmedial line.

Hab. Canada, Ontario, St. Catherines, 1 ♂ type; U.S.A., New York, Buffalo. *Exp.* 24 millim.

Larva. Head pale brown with a curved black band on each lobe. Body robust, joint 12 enlarged; dark brown, mottled, dorsum paler, pinkish on joints 7 to 12, enlarged to a triangular patch on joint 8; a bright white speck subdorsally on joint 12; a slender blackish lateral line. Food-plant: dead leaves of Oak.—H. G. D.

4183. **Monodes chalcedonia.** (Plate CXXXIV. fig. 22.)

Noctua chalcedonia, Hübn. Eur. Schmett., Noct. f. 404 (1808); Smith, Cat. Noct. N. Am. p. 150.
Celæna arna, Guen. Noct. i. p. 222 (1852).
Celæna expuncta, Wlk. x. 269 (1856).
Miana vincta, Wlk. xi. 730 (1857).
Celæna irresoluta, Wlk. xi. 731 (1857).
Laphygma trientiplaga, Wlk. xv. 1677 (1858).
Hadena tracta, Grote, Proc. Ac. Nat. Sci. Phil. 1874, p. 204.

♂. Head, thorax, and abdomen ochreous mixed with brown; metathorax with the crest blackish; tarsi black with pale rings. Fore wing ochreous suffused with brown, the basal area and costal area to medial line ochreous leaving the costa browner; subbasal line represented by slight dark striæ from costa and cell; an oblique blackish shade from antemedial line at median nervure to inner margin towards base; antemedial line double filled in with ochreous, angled outwards below costa, then oblique, waved; claviform small, ochreous slightly defined by brown; orbicular and reniform small with dark centres and ochreous annuli defined by brown, the former rather elongate elliptical, the latter narrow and open above, a black streak in discal fold between them and beyond the reniform to the postmedial line; an indistinct waved medial line; postmedial line double filled in with ochreous, slightly bent outwards below costa, excurved to vein 5, then incurved to lower edge of reniform and outwardly oblique to inner margin; some ochreous points beyond it on costa; an irregular ochreous apical patch with black point on costa, the faint ochreous subterminal line arising from it, somewhat excurved at middle and diffused towards tornus; a terminal series of black points with ochreous points before them; cilia brown with a punctiform ochreous line at base. Hind wing semihyaline white, the costal area and the termen to vein 2 suffused with brown; a fine black terminal line; cilia brown at tips on apical half; the underside with the costal area irrorated with brown, a black discoidal point and postmedial series of minute points on the veins.

♀. Fore wing with the basal and costal areas suffused with brown.

Hab. Canada; U.S.A., New York, Maryland, Alabama, Florida (*Schaus*), 1 ♀, St. John's Bluff (*Doubleday*), 2 ♀ types *irresoluta* and *vincta* and (?) *arna*, Texas, Dallas (*Boll*), 2 ♂, 3 ♀, type *tracta*, Colorado, New Mexico. *Exp.* 26–28 millim. Type † *expuncta* in Mus. Oxon.

Guenée's type *arna* was probably redescribed by Walker as either *irresoluta* or *vincta* and Guenée's label lost.

4184. **Monodes festivoides.** (Plate CXXXIV. fig. 23.)

Celæna festivoides, Guen. Noct. i. p. 220 (1852); Smith, Cat. Noct. N. Am. p. 149.
Erastria varia, Wlk. xii. 808 (1857).
Oligia cephalica, Butl. Entom. xxiv. p. 241 (1891).

Head and base of tegulæ ochreous mixed with dark red-brown; palpi blackish at sides; thorax grey-white irrorated with fuscous; tarsi red-brown with slight pale rings; abdomen grey-white irrorated with fuscous, the anal tuft rufous. Fore wing grey tinged with brown and irrorated with fuscous; subbasal line black, curved, angled inwards in cell and extending to inner margin; antemedial line black defined by whitish on inner side, angled outwards below costa, strongly incurved in cell, then strongly sinuous and faintly double towards inner margin; claviform small, defined by black at extremity; orbicular and reniform whitish irrorated with fuscous and defined by black, the former round with its inner side formed by the sinus of the antemedial line, the latter open above with black patches before and beyond it and some fuscous suffusion below the cell; a slight dark medial line; postmedial line double, black filled in with whitish, slightly bent outwards below costa, then minutely waved, oblique, and touching lower extremity of reniform; subterminal line very indistinct, diffused, pale, with some fuscous beyond it at discal fold, somewhat excurved below vein 7 and at middle; a terminal series of small black spots. Hind wing whitish suffused with fuscous brown; the underside white irrorated with fuscous, a black discoidal spot and indistinct postmedial line with blackish spots in the interspaces towards costa.

Ab. 1. Fore wing more variegated with white on basal and costal areas and beyond the postmedial line.

Ab. 2. *varia.* Fore wing more uniform brown without the black patches before and beyond the reniform.

Hab. Canada; U.S.A., Eastern States to Florida and west to Nebraska, New York, 5 ♂, 1 ♀, Evan's Center (*Grote*), 1 ♀ type *cephalica*, Florida, St. John's Bluff (*Doubleday*), 5 ♂ type and type *varia*, Texas, 1 ♂. *Exp.* 26–30 millim.

4185. **Monodes exesa.** (Plate CXXXIV. fig. 24.)

Celæna exesa, Guen. Noct. i. p. 222 (1852); Smith, Cat. Noct. N. Am. p. 150.
Hadena floridana, Wlk. xxxiii. 730 (1865).

Head and thorax ochreous suffused with rufous and mixed with dark brown; palpi with black patch at sides of 2nd joint; frons black at sides; tegulæ with slight dark medial line; tarsi black ringed with whitish; abdomen greyish ochreous irrorated with fuscous brown. Fore wing ochreous suffused with rufous and irrorated with dark brown, a darker shade in and below cell from antemedial line to termen below apex and vein 2, the veins slightly streaked with black; subbasal line double, waved, oblique, from costa to vein 1 and with patch of black scales below vein 1; antemedial line double, waved, oblique, angled outwards below costa and above inner margin; claviform narrow and elongate, defined by black; orbicular and reniform small, defined by black and with dark centres, the former round, the latter constricted at middle, with a black streak in discal fold and small spot beyond it; a curved waved medial line; postmedial line double at costa, bent outwards below costa, then erect, minutely waved and produced to slight black and white streaks on the veins, some ochreous points beyond it on costa; subterminal line ochreous, arising from an irregular ochreous apical patch, excurved below vein 7, excurved and dentate at middle and bent outwards to tornus; a terminal series of black striæ; cilia fuscous. Hind wing reddish brown; cilia whitish with a dark line through them; the underside white irrorated with brown, the terminal area suffused with brown from apex to vein 2, a blackish discoidal spot and curved postmedial line.

Hab. U.S.A., Florida (*Doubleday*), 2 ♂, 2 ♀ type and type *floridana*, Enterprise, 2 ♀. *Exp.* 30–34 millim.

4186. **Monodes obliquirena**, n. sp. (Plate CXXXIV. fig. 25.)

Head and thorax ochreous suffused with rufous; palpi black, whitish towards tips; frons whitish; tarsi fuscous ringed with white; abdomen grey-brown. Fore wing ochreous suffused with rufous especially on medial area to submedian fold, the terminal area suffused with fuscous except towards apex and tornus; some blackish suffusion on base of inner margin; subbasal line double, rufous filled in with ochreous, waved, from costa to submedian fold; antemedial line double filled in with yellow, oblique, waved, strongly incurved at vein 1; claviform defined by black, narrowing to a point at base; orbicular and reniform with rufous centres and slight yellowish annuli defined by black, the former small, round, the latter an oblique lunule; a brown medial line incurved from costa to upper edge of reniform, then sinuous; postmedial line double filled in with yellow, slightly bent outwards below costa, then incurved, minutely waved and with short black streaks beyond it on the veins with white points on them, some ochreous points beyond it on costa; an apical ochreous patch with the subterminal line arising from it formed of small ochreous spots angled outwards between veins 4, 3 and bent outwards to tornus; a terminal series of minute black lunules defined on inner side by slight ochreous

lunules; a series of ochreous points at base of cilia. Hind wing ochreous white, the veins, costal and terminal areas suffused with reddish brown; cilia ochreous white with a brown line through them; the underside whitish, the costal and terminal areas irrorated with brown, a small black discoidal lunule, traces of a postmedial line with black points on the veins and terminal series of small black lunules.

Hab. Panama, La Chorrera (*Dolby-Tyler*), 1 ♀; St. Vincent (*H. H. Smith*), 1 ♂, 3 ♀ type; Paraguay; Argentina, Tucuman. *Exp.* 22–28 millim.

*4187. **Monodes ensina.** (Plate CXXXIV. fig. 26.)

Oligia ensina, Barnes, Can. Ent. xxxix. p. 12 (1907).

Head and base of tegulæ black-brown, the rest of thorax red-brown; abdomen grey-brown. Fore wing red-brown; subbasal line double filled in with grey, from costa to submedian fold; antemedial line double, excurved below the cell, minutely waved, a quadrate blackish patch before it on costal area; orbicular and reniform small with dark centres and pale annuli defined by black, the former round, the latter oblique, constricted at middle and more or less angled inwards on median nervure, a dark streak from it to postmedial line; medial shade represented by a dark mark on costa and irregular line from lower angle of cell to inner margin; postmedial line double filled in with grey, slightly bent outwards below costa, then minutely waved, excurved to vein 4, then oblique; postmedial area darker, with black streaks below costa and above vein 4; subterminal line formed by a series of pale marks in the interspaces, excurved below vein 7 and at middle; the veins of terminal area with dark streaks; a faint dark terminal line; cilia somewhat paler at base. Hind wing whitish suffused with fuscous especially towards termen; a dark discoidal point; cilia pale with a dark line through them; the underside with the costal and terminal areas tinged with yellowish, a dark discoidal point and sinuous postmedial line.

Hab. U.S.A., Arizona, Huachuca Mts. *Exp.* 30 millim. This species is unknown to me; figured from a drawing from type in Coll. Barnes.

*4188. **Monodes polysticta.** (Plate CXXXIV. fig. 27.)

Monodes polysticta, D. Jones, Trans. Ent. Soc. 1908, p. 161.

♀. Head and thorax fuscous black mixed with some white; legs pale brown, the tarsi black ringed with white; abdomen pale brown suffused with fuscous. Fore wing pale rufous, the terminal area suffused with deep rufous; a blackish mark at base of inner margin; subbasal line represented by two widely separated black striæ from costa and a point below cell; antemedial line indistinct, double, oblique, waved, with two black points before it on median nervure and vein 1; claviform slightly defined by black and white

at extremity; orbicular with pale brownish centre and white annulus defined by black, irregularly rounded and produced on outer side; reniform slightly defined by blackish, with white annulus to upper part and black in lower, twice slightly constricted at middle; a slight waved medial line, oblique from costa to subcostal nervure; postmedial line represented by black points towards costa, then punctiform, with two series of black points beyond it, bent outwards below costa and incurved below vein 5; traces of a dark subterminal line slightly excurved below costa; a whitish mark on costa before apex; cilia dark brown. Hind wing fuscous brown, the cilia white with dark line near base; the underside whitish irrorated with fuscous, the costal half suffused with rufous, a black discoidal spot and curved crenulate postmedial line.

Hab. Brazil, São Paulo, type † in Coll. D. Jones. *Exp.* 26 millim.

4189. **Monodes apicalis.** (Plate CXXXIV. fig. 28.)

Oligia apicalis, Schaus, J. N.Y. Ent. Soc. vi. p. 113 (1898).

Head and thorax pale rufous irrorated with a few deep rufous scales; palpi deep rufous; tarsi fuscous with pale rings; abdomen pale rufous. Fore wing pale rufous slightly irrorated with blackish, a triangular fuscous-brown patch on terminal area from costa near apex to tornus and with its apex curved up to upper angle of cell, the area above it pale brown and with a pale rufous apical spot on it; an indistinct dark waved subbasal line from costa to submedian fold; antemedial line very indistinct, oblique, waved; claviform represented by a black point at its extremity; orbicular slightly defined by brown, round; reniform absent; postmedial line indistinct, double, oblique at costa, then minutely waved and produced to black points at the veins, slightly incurved below vein 4, some pale points beyond it on costa; subterminal line represented by slight pale rufous marks defined on inner side by slight dentate black marks, angled outwards at vein 7, excurved at middle and bent outwards to tornus; a terminal series of white points at the veins and a fine white line at base of cilia. Hind wing rufous, the cilia with fine white line at base; the underside pale rufous irrorated and suffused with red-brown, a dark discoidal lunule and indistinct crenulate postmedial line.

Hab. Venezuela, Aroa, 1 ♂; Brazil, Castro Paraña (*D. Jones*), 1 ♀. *Exp.* ♂ 32, ♀ 36 millim.

4190. **Monodes pallescens**, n. sp. (Plate CXXXIV. fig. 29.)

♀. Head and tegulæ dark red-brown; thorax ochreous white with some dark brown on base of patagia and prothorax and a large patch on metathorax; pectus and legs red-brown, the tarsi with pale rings; abdomen dark greyish brown. Fore wing greyish white slightly irrorated with rufous extending on costa to medial

line and below the cell to postmedial line, the terminal area red-brown suffused with fuscous; a red-brown patch on costa before the antemedial line, another irregular patch from cell to inner margin with diffused black mark on inner margin, and an oblique streak from submedian fold near base to subcostal nervure at antemedial line, which is very indistinct, double, waved, oblique from costa to submedian fold; claviform very faintly defined by brown at extremity; orbicular small, round, whitish defined by brown and with dark point in centre; reniform small with blackish centre and slight pale annulus defined by brown; a brown medial line, oblique from costa to median nervure, then indistinct and inwardly oblique; postmedial line indistinct, black, bent outwards below costa, then minutely dentate and produced to white points on the veins, excurved to vein 4, then incurved, some pale points beyond it on costa; an apical ochreous patch with black suffusion before it, the indistinct pale waved subterminal line arising from it, angled inwards in discal fold and with black streak beyond it, then with some black points on outer side; a terminal series of black striæ; cilia rufous and black with fine pale line at base. Hind wing red-brown, the cilia with a fine pale line at base; the underside brown irrorated with grey, a dark discoidal lunule, diffused waved postmedial line, and diffused subterminal band.

Hab. Venezuela, 1 ♀ type. *Exp.* 28 millim.

4191. **Monodes hemipolia.** (Plate CXXXIV. fig. 30.)

Monodes hemipolia, Druce, A. M. N. H. (8) i. p. 299 (1908).

♂. Head and thorax grey-white mixed with rufous; palpi brown at sides except at tips; antennæ brown; tegulæ and metathoracic crest tipped with brown; tarsi fuscous ringed with whitish; abdomen grey dorsally suffused with brown. Fore wing with the basal half grey-white, the terminal half rufous; subbasal line double, the inner line brown, the outer rufous, waved, from costa to vein 1; antemedial line double, rufous with blackish points at costa, minutely waved; orbicular hardly traceable, faintly defined by rufous and with slight brown centre, round; reniform an oblique black-brown lunule with faint grey annulus; medial line diffused, brown and oblique from costa to reniform, slight and incurved from lower angle of cell to inner margin; postmedial line whitish, bent outwards below costa, slightly incurved at discal fold, incurved below vein 4, some whitish points with slight black streaks between them beyond it on costa on a diffused whitish patch; subterminal line grey-white, slightly excurved at middle; a terminal series of black-brown points slightly defined by grey. Hind wing fuscous brown, the costal area whitish to beyond middle; a blackish discoidal bar; cilia whitish with a dark line near base; the underside grey, the basal half suffused with brown, the terminal half irrorated with brown, a black discoidal spot,

curved minutely waved postmedial line, and terminal series of points from apex to vein 2.

Hab. S.E. Peru, S. Domingo (*Ockenden*), type † ♂ in Coll. Druce, Oconeque, 1 ♀. *Exp.* 26 millim.

4192. **Monodes phæopera**, n. sp. (Plate CXXXIV. fig. 31.)

♂. Head and thorax ochreous mixed with red-brown; palpi black except at tips; tegulæ with black line near tips; tarsi black ringed with white; abdomen ochreous irrorated with black. Fore wing greyish ochreous with slight dark irroration, the medial area suffused with black from costa to below cell, the terminal area suffused with black except towards apex and tornus, the veins with slight dark streaks; subbasal line double, the outer line indistinct, waved, extending to inner margin where there is a black mark beyond it; antemedial line indistinctly double, angled outwards below costa, then waved; claviform moderate, defined by black; orbicular and reniform defined by black, the former with blackish centre, round, the latter narrow, oblique elliptical, its centre slightly tinged with brown; a sinuous medial line from lower angle of cell to inner margin; postmedial line bent outwards below costa, then rather oblique, sinuous, with short black streaks beyond it on the veins, some slight dark marks beyond it on costa; subterminal line hardly traceable, pale, excurved below vein 7 and at middle; a terminal series of black points defined by slight pale lunules; cilia ochreous and fuscous. Hind wing ochreous white tinged with brown, the veins and terminal area suffused with brown; cilia whitish, with a brown line through them; the underside white, the costal and terminal areas sparsely irrorated with brown, a small black discoidal spot, indistinct minutely crenulate postmedial line with some black points on the veins and terminal series of black points.

Hab. Venezuela, Aroa, 1 ♂ type. *Exp.* 28 millim.

4193. **Monodes niveiplaga.** (Plate CXXXIV. fig. 32.)

Oligia niveiplaga, Schaus, J. N.Y. Ent. Soc. vi. p. 112 (1898).

♀. Head and thorax tinged with rufous; palpi black at sides; frons with lateral black bars; patagia and dorsum of thorax with blackish patches; pectus and legs black-brown, the tarsi ringed with white; abdomen ochreous dorsally suffused with brown, ventrally irrorated with black, the dorsal crest black at tip. Fore wing greyish ochreous, slightly tinged with rufous and irrorated with black, the veins with blackish streaks; subbasal line represented by an oblique black striga from costa and slight curved mark from cell; a slight black streak on inner margin near base followed by a large whitish patch irrorated with black before the antemedial line, which is double filled in with white, oblique, waved; claviform slightly defined by black above at extremity; orbicular and

reniform ochreous defined by black, the former round, the latter elliptical, its lower part filled in with black; a strong obliquely curved sinuous black medial line; postmedial line black defined by white on outer side, strongly bent outwards below costa, excurved to vein 4, then incurved, some black points on its outer edge on the veins, blackish patches beyond it below costa and at middle and some white points on costa; subterminal line whitish, hardly traceable, slightly defined on inner side by fuscous on inner half, excurved below vein 7 and at middle and bent outwards to tornus, with black streaks from it to termen on veins 4, 3, 2; cilia pale rufous, with series of small black spots. Hind wing white, the veins of terminal area blackish, the termen suffused with black, narrowing to tornus; a discoidal point; cilia pale rufous, with series of small blackish spots; the underside with the costal area and terminal area to vein 4 irrorated with black, blackish marks at middle of costa and on terminal area at apex and discal fold, a small black discoidal spot and slight curved postmedial line except on inner area with minute black streaks on the veins.

Hab. Venezuela, Aroa, 1 ♀. *Exp.* 28 millim.

*4194. Monodes leucomela. (Plate CXXXV. fig. 1.)

Monodes leucomela, Dogn. Ann. Soc. Ent. Belg. li. p. 236 (1907).

♀. Head and thorax white mixed with blackish; palpi black with white rings at extremities of 2nd and 3rd joints; tegulæ blackish with white tips; pectus and legs blackish mixed with some white, the tarsi ringed with white; abdomen white tinged with brown, the ventral surface black irrorated with white. Fore wing white; the basal area blackish from costa to submedian fold, with subbasal black point below costa and bounded by the antemedial black line, which is strongly angled inwards in submedian fold, then excurved and defined by fuscous on inner side, ending at vein 1; orbicular small, round, incompletely defined by black and with blackish patch above it on costa; reniform defined by blackish at sides, oblique bar-shaped, angled inwards on median nervure; a slight medial shade from lower angle of cell to inner margin; postmedial line black, slightly excurved round the reniform and touching its upper and lower extremities, then waved; postmedial area almost entirely suffused with black with some white points on costa; subterminal line black, excurved below vein 7 and at middle, then incurved; some fuscous suffusion on terminal area at discal and submedian folds; a terminal series of black striæ; cilia white with a series of black spots. Hind wing whitish suffused with fuscous, especially on terminal area; cilia white mixed with some fuscous; the underside white, the costal and terminal areas suffused and irrorated with fuscous, a diffused oblique dark medial band, discoidal blackish spot, and diffused curved postmedial line.

Hab. Argentina, Tucuman, type † ♀ in Coll. Dognin. *Exp.* 26 millim.

*4195. Monodes mastera. (Plate CXXXV. fig. 2.)

Microcœlia mastera, Schaus, Trans. Am. Ent. Soc. xxx. p. 151 (1904).

♂. Head and thorax whitish tinged with brown and mixed with black, the vertex of head pure white; frons with black band; pectus and legs whitish tinged with red-brown, the tarsi blackish ringed with white; abdomen whitish tinged with rufous and irrorated with fuscous. Fore wing white largely suffused with olive-green and purplish grey, especially on medial area except outer part of costal area; subbasal line black defined by white on outer side, double at costa, waved, from costa to submedian fold; antemedial line blackish defined by white on inner side, double at costa, oblique, sinuous; claviform whitish slightly defined by black at extremity; orbicular and reniform whitish, the former defined by black at sides, rather triangular and with whitish patch above it on costa, the latter defined by black except above and slightly angled inwards on median nervure; an indistinct waved blackish line from lower angle of cell to inner margin; postmedial line black defined by white on outer side, double towards costa, bent outwards below costa, angled inwards at discal fold, incurved below vein 4 and slightly excurved at vein 1, some white points beyond it on costa; subterminal line white with blackish patch before it on costa, excurved below vein 7 and at middle, some brownish suffusion beyond it except at apex and a triangular brown patch at discal fold; a terminal series of small black lunules; cilia whitish mixed with brown and with brown line through them. Hind wing whitish suffused with brown; a slight discoidal point, traces of a postmedial line, and terminal series of points; cilia white with a dark line through them; the underside white tinged with red-brown and irrorated with dark brown, a brown discoidal spot, waved postmedial line, and terminal series of striæ.

Hab. Brazil, Castro Paraña (*D. Jones*), type † ♂ in U.S. Nat. Mus. *Exp.* 30 millim.

4196. Monodes marmorata. (Plate CXXXV. fig. 3.)

Miana marmorata, Schaus, Trans. Am. Ent. Soc. xxi. p. 224 (1894).

♂. Head and thorax white tinged with pale olive-brown; palpi with the 2nd joint brownish at sides; tarsi brown ringed with pale olive; abdomen reddish brown, the basal segment and ventral surface whitish. Fore wing ochreous white slightly irrorated with brown, the medial area below the cell suffused with olive-yellow, the postmedial and terminal areas suffused with red-brown leaving some yellow at tornus; subbasal line represented by black-brown spots below costa and cell; antemedial line black-brown defined on inner side by whitish, oblique, dentate; claviform represented by an oblique white bar on upper edge of extremity and a dark point at extremity; orbicular white, oblique oblong; reniform white

with olive-yellow centre, oblique oblong, angled inwards on median nervure, some dark brown before and beyond orbicular and beyond the reniform; postmedial line black slightly defined by white on outer side, strongly bent outwards below costa, then minutely dentate, excurved to vein 5, then oblique, some purplish-white suffusion beyond it between veins 4 and 2 and some white points on costa; subterminal line very indistinct, pale, defined on inner side by faint somewhat dentate black marks, angled outwards at vein 7 where it is met by an oblique white bar from apex, excurved at middle and angled inwards at discal and submedian folds; a terminal series of small black lunules; cilia yellowish white mixed with red-brown. Hind wing reddish brown, the cilia paler; the underside whitish, the costal and terminal areas irrorated with brown, a black discoidal spot, crenulate postmedial line, and terminal series of lunules.

Hab. Costa Rica, Candelaria Mts. (*Underwood*), 1 ♀, Godman-Salvin Coll.; Brazil, Castro Paraña. *Exp.* 30 millim.

*4197. **Monodes semirufa.** (Plate CXXXV. fig. 4.)

Monodes semirufa, Druce, A. M. N. H. (8) i. p. 299 (1908).

♀. Head and thorax rufous, the head and tegulæ with blackish mixed; palpi fuscous; antennæ black; pectus and legs fuscous, the tarsi black ringed with whitish; abdomen rufous suffused with brown. Fore wing with the basal half rufous, the terminal half brown, suffused with white basally; subbasal line represented by a few black scales below costa; antemedial line brown, waved, defined on inner side by whitish towards inner margin with a patch of brown suffusion before it; orbicular represented by an oblique rufous striga defined by brown on its outer edge; reniform narrow, faintly defined by white, with a yellowish-rufous spot beyond it; postmedial line indistinctly double, brown filled in with white, bent outwards below costa, incurved below vein 4 and excurved below submedian fold; a yellow streak beyond it in discal fold to the oblique diffused white fascia from apex; subterminal line absent; a terminal black line defined by yellowish marks on inner side and with white points at the veins. Hind wing whitish suffused with brown; the underside whitish irrorated with red-brown, a brown discoidal spot and sinuous postmedial line.

Hab. S.E. Peru, S. Domingo (*Ockenden*), type † ♀ in Coll. Druce. *Exp.* 22 millim.

4198. **Monodes repanda.** (Plate CXXXV. fig. 5.)

Photedes repanda, Schaus, Trans. Am. Ent. Soc. xxx. p. 157 (1904).

♀. Head, tegulæ, and prothorax yellow, thorax red-brown; sides of palpi and frons black; tarsi with slight pale rings; abdomen grey suffused with brown, the dorsal crest black at tips.

Fore wing whitish suffused with brown and irrorated with fuscous, the inner area yellowish white tinged with rufous to the postmedial line, the veins of terminal area streaked with black; a blackish patch on inner area before the antemedial line, which is very indistinct, oblique from costa to submedian fold, then inwardly oblique; claviform minute, yellow defined by brown; orbicular absent; reniform a narrow oblique lunule defined by brown; a slight dark spot on middle of inner margin; a very indistinct dark medial line, diffused from costa to the reniform, and waved from lower angle of cell to inner margin; postmedial line blackish filled in with whitish, excurved from below costa to vein 4, then incurved and again excurved below submedian fold, some whitish points beyond it on costa; an oblique whitish patch from apex, with the rather diffused oblique blackish subterminal line arising from it; another rather diffused blackish line before termen with slight yellowish spots beyond it; a terminal series of black points; cilia blackish and grey with a fine white line at base. Hind wing white, the termen tinged with brown except towards tornus; cilia white, brown at tips towards apex; the underside with the costal area irrorated with brown, a small black discoidal spot, indistinct postmedial line with minute black streaks on the veins and terminal series of small black spots.

Hab. Mexico, Orizaba (*Schaus*), 1 ♀. *Exp.* 20 millim.

4199. **Monodes basistigma.** (Plate CXXXV. fig. 6.)

Erastria basistigma, Wlk. xv. 1762 (1858).

♂. Head and base of tegulæ pale fulvous; sides of palpi and frons with some black; tegulæ with black medial line and white tips; thorax white mixed with brown and black; pectus and legs pale fulvous, fore tibiæ black, the tarsi black ringed with white; abdomen whitish suffused with brown. Fore wing white tinged with pale brown; the basal area suffused with brown and black, bounded by a curved black line retracted to inner margin; subbasal line black defined by white on inner side, strongly angled inwards in cell and retracted to vein 1; antemedial line pale brown, double, waved, oblique, with black points at costa and inner margin; claviform and orbicular absent; reniform white defined by black except above and with waved brown line in middle, a narrow oblique lunule with irregular outline; medial line double, irregularly waved, oblique, angled inwards on median nervure, the medial area beyond it suffused with brown; postmedial line double filled in with white, the inner line black, the outer brown, with small black spot at costa, slightly bent outwards below costa, then minutely waved, excurved to vein 4, then incurved, with small black spot before it beyond the reniform and semicircular brown patch beyond it on costa with white points at costa; subterminal line white, slightly defined by brown on inner side and by a black

bar towards inner margin, minutely waved, excurved below vein 7 and at middle; a terminal series of small black lunules; cilia black-brown, white at apex and middle. Hind wing whitish suffused with brown, the terminal area darker; cilia white; the underside white, the costal area and terminal area to vein 2 rufous slightly irrorated with black, a black discoidal point with faint dark bar above it from costa, a crenulate postmedial line from costa to vein 5 with black points at the veins.

Hab. Jamaica, 1 ♂ type, Newcastle, 1 ♂. *Exp.* 24 millim.

*4200. **Monodes hemileuca.** (Plate CXXXV. fig. 7.)

Monodes hemileuca, D. Jones, Trans. Ent. Soc. 1908, p. 160.

♀. Head and thorax white faintly tinged with yellow; palpi and antennæ rufous; pectus, legs, and abdomen white tinged with rufous. Fore wing white slightly irrorated with pale rufous, the terminal half suffused with rufous, its inner edge running obliquely from middle of costa to inner margin at postmedial line; very indistinct, irregularly waved, oblique antemedial and medial rufous lines; orbicular absent; reniform oblique, white, rather constricted at middle, with some dark brown scales on its inner edge and diffused dark streak from it to postmedial line, which is red-brown defined by white on outer side, oblique from costa to upper edge of reniform, then strongly angled outwards in discal fold, incurved to lower edge of reniform and again excurved; a diffused red-brown subterminal line excurved below vein 7 and at middle, with a round white patch beyond it at apex defined by red-brown on outer side; cilia pure white at base. Hind wing whitish suffused with reddish brown, a slight brown discoidal bar; cilia white with a slight brown line through them; the underside white irrorated with brown, the costal area tinged with rufous, a small discoidal spot and curved minutely waved postmedial line with brownish marks beyond it at discal and submedian folds.

Hab. Brazil, São Paulo, type † in Coll. D. Jones. *Exp.* 24 millim.

4201. **Monodes venustula.**

Noctua venustula, Hübn. Beitr. ii. 3, p. 78, pl. 4. f. *z* (1790); id. Eur. Schmett., Noct. f. 294; Dup. Lép. Fr., Suppl. iii. p. 565, pl. 47. f. 5; Steph. Ill. Brit. Ent., Haust. iii. p. 118; Staud. Cat. Lep. pal. p. 230.
Pyralis hybnerana, Fabr. Ent. Syst. iii. 2, p. 2247 (1793).

Head and tegulæ rufous, the latter with slight whitish line near base and whitish tips; thorax white tinged with pink, the patagia with slight curved brown medial line, the pro- and metathoracic crests mixed with brown; pectus and legs whitish tinged with brown, the fore legs red-brown; abdomen whitish suffused with red-brown except at base. Fore wing grey-white suffused with

red-brown, a diffused white fascia tinged with pink from subterminal line near apex through the cell to base of inner margin; subbasal line waved, from costa to vein 1, brown defined by greyish on costal area, blackish below the cell; antemedial line double except in lower part of cell, waved, brown filled in with greyish on costal area, blackish filled in with white from cell to inner margin; claviform defined by a white and black lunule at extremity; orbicular absent; a semicircular blackish patch in lower extremity of cell; reniform with greyish lunule defined by brown and whitish annulus with two dark points on its outer edge; medial line red-brown, oblique from costa to reniform, below the cell waved and

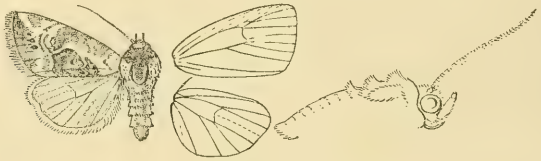


Fig. 138.—*Monodes venustula*, ♂. $\frac{2}{3}$.

traversing an area of deeper red-brown suffusion; postmedial line double filled in with white, oblique from costa to upper extremity of reniform, then minutely waved, excurved round the reniform, then incurved, some grey-white beyond it on costa followed by white points on a red-brown patch; subterminal line white, obsolescent between veins 6 and 3, minutely waved, emitting short streaks towards apex, defined on inner side by black marks above and below vein 5 and angled outwards on vein 1; the termen grey-white defined on inner side by red-brown and with terminal series of small brownish spots; cilia red-brown. Hind wing white tinged with red-brown, the terminal area suffused with red-brown; a faint discoidal striga and curved postmedial line; cilia white with red-brown line near base; the underside white thickly irrorated with red-brown, a red-brown discoidal spot, curved postmedial line, and terminal series of lunules.

Hab. Britain, Leech Coll.; France; Germany, Zeller, Frey, and Leech Colls.; Austria, Leech Coll.; Hungary; Switzerland; Spain, Bilbao; Rumelia; S. Russia; Armenia; Transcaucasia, Grusia, Lagodechi (*Mlokosewitch*), 1 ♂, 1 ♀; Persia; W. Siberia, Altai; E. Siberia, Amurland, Ussuri. *Exp.* 20–24 millim.

Larva. Meyr. Brit. Lep. p. 165; Barrett, Lep. Brit. vi. p. 178, pl. 246. f. 4.

Purplish brown; dorsal line pale, indistinct; a pale lateral spot on 4th somite; head brown. Food-plant: flowers of *Potentilla reptans*. 8.

*4202. Monodes phæoplaga. (Plate CXXXV. fig. 8.)

Monodes phæoplaga, D. Jones, Trans. Ent. Soc. 1908, p. 162.

♂. Head and thorax pale red-brown mixed with fuscous; palpi with some blackish at sides of 2nd joint; pectus and legs whitish tinged with brown; abdomen whitish tinged with brown, the anal tuft with pale rufous. Fore wing pale rufous irrorated and suffused with fuscous, the inner and postmedial areas whitish irrorated with rufous; subbasal line represented by slight dark striæ from costa and cell; antemedial line minutely waved, oblique from costa to median nervure, then erect and angled inwards on vein 1, a short black streak beyond it in submedian fold; two dark striæ from middle of costa; postmedial line strongly bent outwards below costa, then very minutely waved, angled inwards in submedian interspace and again bent outwards, some pale points beyond it on costa; subterminal line whitish, bent outwards to apex and confluent with the pale postmedial area, excurved at middle, and defined by a black patch on outer side, bent outwards to tornus; an oblique diffused blackish streak from apex; a terminal series of black striæ; cilia pale brown. Hind wing whitish; a faint discoidal spot and curved postmedial line with the area beyond it tinged with brown from costa to vein 4; a fine dark terminal line; the underside with the costal and apical areas irrorated with brown, a black discoidal spot, curved minutely waved postmedial line, and black terminal line.

♀. Fore wing with black-brown patch on medial area in, below, and beyond end of cell.

Hab. Brazil, Castro Paraña, type † in Coll. D. Jones. *Exp.* 20 millim.

*4203. Monodes chlorozona. (Plate CXXXV. fig. 9.)

Monodes chlorozona, D. Jones, Trans. Ent. Soc. 1908, p. 161.

♀. Head and thorax grey mixed with brown; palpi blackish; tegulæ with blackish dorsal streak; pectus and legs blackish; abdomen grey. Fore wing pale olivaceous grey tinged with brown, the basal costal area, the medial area to submedian fold, and the terminal area to vein 2 greenish olive; subbasal line black, curved, from costa to submedian fold; antemedial line black, minutely waved, oblique from costa to submedian fold and slightly angled outwards on subcostal nervure; orbicular and reniform absent; a diffused oblique black medial band from costa to submedian fold, then represented by a few black scales and bent inwards to inner margin; postmedial line black slightly defined by white on outer side, very minutely waved, oblique, strongly and acutely angled outwards in discal fold, some slight dark streaks with white marks between them beyond it on costa; traces of a whitish subterminal line excurved below vein 7 and at middle and with slight fuscous suffusion on its inner side, then angled inwards and oblique to

tornus; a rounded white apical spot tinged with yellow-brown on lower edge; a terminal series of black striæ; cilia grey. Hind wing grey suffused with fuscous; a slight dark terminal line; cilia white at base, fuscous at tips; the underside whitish irrorated with fuscous especially on costal and terminal areas, a black discoidal spot, diffused postmedial line, and terminal series of black striæ.

Hab. Brazil, Castro Paraña, type † in Coll. D. Jones. *Exp.* 18 millim.

4204. **Monodes bertha.** (Plate CXXXV. fig. 10.)

Eurois bertha, Schaus, J. N.Y. Ent. Soc. vi. p. 143 (1898).

♀. Head and thorax clothed with dark brown mixed with pink and white scales; palpi with the extremity of 2nd joint white; frons with lateral white patches; basal joint of antennæ white; tibiæ and tarsi ringed with white; abdomen dark brown with whitish segmental lines. Fore wing dark brown irrorated with white, the medial area with median nervure and veins 3, 2, 1 streaked with pink; a pink point at base; subbasal line represented by slight black striæ from costa and cell; antemedial line white, interrupted at the veins, oblique from costa to median nervure where it is retracted, then obliquely curved to inner margin; claviform absent; orbicular represented by an oblique white striga; reniform narrow, defined by white, constricted at middle and strongly angled inwards on median nervure; postmedial line black defined by white on outer side, slightly beyond the cell, bent outwards below costa, then with series of black-and-white points beyond it on the veins, incurved below vein 4, some white points beyond it on costa; subterminal line whitish defined on inner side by short black streaks, angled outwards at vein 7, inwards at discal and submedian folds, and excurved at middle; a terminal series of black striæ; cilia white with black line through them and series of black spots at tips. Hind wing dark fuscous brown; cilia white with a brown line near base; the underside white irrorated with brown, an elliptical discoidal spot, rather diffused minutely waved postmedial line, and diffused terminal band.

Hab. Brazil, Castro Paraña (*D. Jones*), 1 ♀. *Exp.* 32 millim.

*4205. **Monodes sanctanna.** (Plate CXXXV. fig. 11.)

Agrotis sanctanna, Guen. Noct. i. p. 295 (1852).

♀. Head reddish brown; thorax and abdomen clothed with grey and brown scales. Fore wing pale brown suffused with fuscous and white, especially on costal area and beyond the postmedial line; the subbasal line waved, blackish, from costa to vein 1, defined by white on outer side on costal area; the antemedial line oblique, double, waved, filled in with white on costal half; claviform indicated by a few dark scales; orbicular small, oblique,

white defined by black; reniform constricted at middle, with brown centre and white annulus defined by black; an indistinct oblique waved medial line; the postmedial line defined by white on outer side, minutely waved, bent outwards below costa, excurved to vein 4, then incurved, some white points beyond it on costa on a quadrate blackish patch; the subterminal line indistinct, greyish, angled outwards at vein 7 and excurved at middle, with some dentate blackish marks before its medial part, the one above vein 4 extending to postmedial line; a fine dark terminal line and some dark points on cilia. Hind wing whitish, the veins and terminal area fuscous brown; cilia brown at base, grey at tips; the underside with the costal area irrorated with brown, a small prominent discoidal spot and sinuous diffused postmedial line.

Hab. Brazil, Neu Fribourg, type † ♀ in Coll. Oberthür. *Exp.* 36 millim.

4206. **Monodes rubripicta**, n. sp. (Plate CXXXV. fig. 12.)

Head and thorax red-brown mixed with ochreous and blackish; palpi black ringed with whitish at extremities of 1st and 2nd joints; frons whitish with lateral black bars; pectus fuscous; legs fuscous and brown, the tarsi black ringed with white; abdomen fuscous with slight pale segmental lines. Fore wing dark reddish brown mixed with ochreous and black, the medial area yellowish irrorated with brown and suffused with bright pink before the orbicular, in lower part of reniform and below the cell; subbasal line represented by black spots below costa and cell, with waved yellow line on outer side; antemedial line black, defined by yellow on inner side, very oblique, waved, with more distinct black spots at costa and inner margin; claviform absent; orbicular a minute oblique elliptical white spot defined by black; reniform yellowish white, its lower part filled in with pink, rather narrow, and with its extremities produced, some diffused black between the stigmata and beyond the reniform; postmedial line slightly defined by white on outer side and with white spot at costa, bent outwards below costa, slightly excurved to vein 4, then slightly incurved, some white points beyond it on costa; subterminal line represented by a series of obscure blackish marks; terminal area yellowish except at apex; a terminal series of slight blackish lunules; cilia yellow mixed with brown. Hind wing deep fuscous brown, greyish at base; cilia white with a slight fuscous line through them; the underside bluish white, the costal and terminal areas broadly fuscous, a deep black discoidal lunule and sinuous fuscous postmedial line.

Hab. Venezuela, 1 ♂ type; Br. Guiana (*Roberts*), 1 ♀. *Exp.* 28–34 millim.

*4207. **Monodes leucostigma.** (Plate CXXXV. fig. 13.)

Monodes leucostigma, Druce, A. M. N. H. (8) i. p. 299 (1908).

♀. Head yellowish white; palpi, antennæ and thorax red-brown; abdomen greyish suffused with brown. Fore wing red-brown with some blackish suffusion on ante- and postmedial areas; subbasal line blackish, curved, from costa to vein 1; antemedial line indistinct, dark, angled inwards on vein 1; orbicular white defined by some black scales, narrow, oblique; reniform with slight fuscous centre and whitish annulus, narrow, constricted at middle; postmedial line double, brown filled in with whitish, strongly bent outwards below costa, then oblique, some faint pale points beyond it on costa; a faint oblique whitish shade from apex; subterminal line only defined by the contrast between the postmedial and terminal areas, excurved at middle; cilia with a fine white line at base. Hind wing whitish tinged with red-brown, especially on terminal area; a slight discoidal lunule; cilia with a fine white line at base; the underside whitish tinged with brown, the costal half irrorated with red-brown, a brown discoidal lunule and sinuous postmedial line.

Hab. S.E. Peru, Oconeque (*Ockenden*), type † ♀ in Coll. Druce. *Exp.* 22 millim.

4208. **Monodes algama.** (Plate CXXXV. fig. 14.)

Bryophila algama, Schaus, Trans. Am. Ent. Soc. xxx. p. 151 (1904).

Head and thorax black mixed with white, the vertex of head, tegulæ, and patagia with white patches, the last and metathoracic crest with some pink scales; tibiæ and tarsi ringed with white; abdomen grey tinged with brown, the ventral surface black. Fore wing ochreous white, suffused in parts with brown, especially on medial area and medial part of terminal area, the veins irrorated with black scales; the costal half of basal area black crossed by the curved ochreous subbasal line; antemedial line black defined by ochreous white on inner side and pure white towards costa, angled outwards below costa, then oblique, sinuous; orbicular white defined by black, oblique, its lower extremity acute; reniform with red-brown and black centre and white annulus defined by black, constricted at middle and angled inwards on median nervure to near orbicular; a black patch in cell between the stigmata and a black spot beyond the reniform; a slight curved blackish medial line; postmedial line black, defined by white on outer side, very oblique from costa to vein 5, excurved to vein 4, then incurved and crossed by minute black streaks on veins 3, 2, 1, a black patch beyond it on costal area with white points on costa; subterminal line indistinct, whitish, inwardly oblique from costa to vein 6, then sinuous and with two small black spots before it at middle; a terminal series of slight brown striæ; cilia reddish brown mixed with whitish. Hind wing whitish tinged with

brown, the terminal area suffused with brown, a curved brown postmedial line; cilia white with a slight brown line through them; the underside white irrorated with brown, a small blackish discoidal spot, diffused curved postmedial line and diffused subterminal line expanding into a patch at costa, black, and with irregular outer edge from costa to vein 4.

Hab. Brazil, Castro Paraña, São Paulo (*D. Jones*), 1 ♂. *Exp.* 26–28 millim.

4209. **Monodes pulchra.**

Miana pulchra, Druce, Biol. Centr.-Am., Het. i. p. 274, pl. 26. f. 22 (1889).

♀. Head whitish mixed with brown; palpi white at extremities of 2nd and 3rd joints; thorax pale rufous with some brown scales, the tips of patagia black; pectus and legs brown and whitish, the tarsi with pale rings; abdomen fuscous brown, the ventral surface whitish. Fore wing whitish, mostly suffused with fulvous yellow and slightly irrorated with black; subbasal line represented by black spots below costa and cell; antemedial line black slightly defined on each side by white, oblique, waved, interrupted, angled inwards on vein 1; claviform represented by a black point at its extremity; orbicular a white point on a conical black patch extending to reniform, which is pale yellow with a slight white annulus and black point in lower part and black patch beyond it; postmedial line black slightly defined on each side by white, bent outwards below costa, then dentate, oblique below vein 4, some white points with black striæ between them beyond it on costa; subterminal line indistinct, whitish, defined on inner side by diffused black, angled outwards at vein 7 and middle and inwards in discal and submedian folds, the area beyond it whitish; a terminal series of prominent black spots; cilia whitish tinged with rufous towards apex and with series of fuscous striæ. Hind wing fuscous brown; cilia white with fuscous line through them; the underside white irrorated with brown, the terminal area broadly suffused with brown, a small black discoidal spot and minutely waved postmedial line.

Hab. Guatemala, Vera Paz, Cubilguitz (*Champion*), 1 ♀; Panama, Chiriqui (*Champion*), 1 ♀ type, Godman-Salvin Coll. *Exp.* 26 millim.

*4210. **Monodes orbiculata.** (Plate CXXXV. fig. 15.)

Eurois orbiculata, Schaus, J. N.Y. Ent. Soc. vi. p. 143 (1898).

♂. Head and thorax olive-brown mixed with greyish; 2nd joint of palpi with some black above; frons with blackish bar; tegulæ with some black scales near tips; prothoracic crest black at base; tarsi banded with black; abdomen olive-brown dorsally suffused with fuscous except at base and extremity. Fore wing

olive-brown, slightly irrorated and in parts suffused with fuscous; subbasal line represented by double black striæ from costa and cell, filled in with whitish and defined by whitish on outer side; antemedial line defined by whitish on inner side, slightly angled outwards below costa, incurved to submedian fold, then oblique, waved; orbicular pure white defined by black, small, round; reniform defined by blackish, with white and black bar on inner edge, small; some black suffusion in cell between the stigmata, and a diffused blackish shade from middle of costa; postmedial line defined by whitish on outer side, slightly bent outwards below costa, then minutely waved, excurved to vein 4, then oblique, some whitish points beyond it on costa; subterminal line represented by a diffused oblique whitish fascia from apex to near postmedial line, then a pale line excurved at middle and angled inwards in submedian fold; the terminal area with dark shade below apex; a terminal series of black striæ defined by whitish on inner side; cilia with series of whitish points at base. Hind wing dark brown, the cilia with fine whitish line at base and whitish tips; the underside whitish, the costal area irrorated with brown, a large blackish discoidal lunule; postmedial line excurved and waved to vein 4, then incurved, a diffused subterminal band and black terminal line.

Hab. Brazil, Castro Paraña in Coll. D. Jones. *Exp.* 38 millim.

*4211. **Monodes chionopis.** (Plate CXXXV. fig. 16.)

Monodes chionopis, Druce, A. M. N. H. (8) i. p. 299 (1908).

♂. Head ochreous white; palpi fuscous at sides except at tips; frons with fuscous spot; antennæ black except basal joint; thorax ochreous white mixed with black; tarsi black ringed with ochreous; abdomen ochreous mixed with fuscous, the basal crest and anal tuft tinged with rufous. Fore wing ochreous white, tinged with olive and irrorated with some black, the antemedial area to submedian fold and the postmedial costal area black; subbasal line ochreous, waved, from costa to vein 1; antemedial line black, defined by white on inner side, oblique, waved; claviform defined by a slight black streak above; orbicular pure white defined by black, small, round; reniform ochreous, incompletely defined by black, its centre irrorated with black, constricted at middle; a medial black bar from costa and slight oblique line from lower angle of cell to inner margin; postmedial line black, defined by whitish on outer side, oblique from costa to vein 6, then incurved, some white points beyond it on costa; subterminal line whitish defined on inner side by some black, excurved below vein 7 and at middle; a terminal black line with white points at the veins. Hind wing white slightly tinged with brown, the terminal area suffused with brown from apex to vein 2; a slight discoidal lunule; cilia brown towards apex with whitish line at base; the underside with the costal area irrorated with brown, the apical

area suffused with black, a black discoidal spot and sinuous postmedial line.

Hab. S.E. Peru, S. Domingo (*Ockenden*), type † ♂ in Coll. Druce. *Exp.* 22 millim.

*4212. **Monodes thoracica.** (Plate CXXXV. fig. 17.)

Oligia thoracica, Schaus, J. N.Y. Ent. Soc. vi. p. 113 (1898).

♂. Head rufous with slight black marks at base of antennæ; tegulæ tipped with white; thorax rufous mixed with white, the patagia black except towards base; pectus and legs brown mixed with greyish, the tarsi blackish ringed with white; abdomen ochreous suffused with brown and with tufts of long yellowish-white hair from the basal stigmata. Fore wing red-brown, the costal area to subterminal line, the cell and areas below its base and beyond and below its extremity suffused with blackish; subbasal line represented by double striæ filled in with whitish from costa, and a striga from cell; antemedial line double, filled in with whitish, oblique, waved; orbicular pure white defined by black, elliptical; reniform red-brown defined by diffused black, small; postmedial line black, defined on outer side by white towards costa, bent outwards below costa, then minutely dentate, with black and white points beyond it on the veins and streaks below veins 7 and 5, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line indistinct, pale, slightly excurved below vein 7 and at middle and with minute dentate black mark on inner side below vein 4; some minute white points at middle of termen; cilia with an indistinct dark line through them. Hind wing white tinged with brown, the terminal area suffused with brown; a slight discoidal striga and diffused curved postmedial line; cilia whitish with a brown line near base; the underside white, the costal area irrorated with brown, a blackish discoidal lunule; sinuous rather maculate postmedial line and subterminal patches below apex and at discal and submedian folds.

Hab. Brazil, São Paulo (*D. Jones*), type † ♂ in U.S. Nat. Mus. *Exp.* 34 millim.

4213. **Monodes castrensis.** (Plate CXXXV. fig. 18.)

Lithacodia castrensis, Schaus, Trans. Am. Ent. Soc. xxx. p. 161 (1904).

♀. Head and thorax brown mixed with fuscous and grey, the upper edge of patagia and metathoracic crest blackish, the tarsi ringed with white; abdomen fuscous brown mixed with grey, the dorsal crest rufous. Fore wing pale brown irrorated with dark red-brown; a large blue-black patch on antemedial area from costa to submedian fold with a small blackish spot below it on vein 1 and a short black streak in submedian fold before the antemedial

line, which is double, minutely waved, angled inwards on vein 1; claviform represented by an oblique red-brown shade; orbicular very small, bar-shaped, pure white defined by black; reniform oblique bar-shaped, angled slightly inwards on subcostal nervure, its centre blue-black mixed with grey and defined by grey at sides, a chocolate-brown patch before it in cell and another beyond it extending to the postmedial line; an oblique black line from lower angle of cell to inner margin; postmedial line double, except on inner area, very obliquely excurved from costa to vein 5, then inwardly oblique to vein 2 and erect to inner margin, a blue-black and greyish patch beyond it on costal area with some small white spots on costa; subterminal line very indistinct, diffused, pale, strongly defined by black suffusion on inner side towards costa and at middle, angled outwards at vein 7 and below 4, angled inwards to the postmedial line at discal fold, almost obsolete towards tornus; the veins of terminal area slightly streaked with blackish and with white points at their extremities; cilia brown with slight whitish lines at base and middle. Hind wing brown, greyish towards base; cilia with a fine white line at base; the underside whitish irrorated with brown, the terminal area suffused with brown, a black discoidal lunule, indistinct diffused oblique medial line, and diffused waved postmedial line incurved below vein 4.

Hab. Brazil, São Paulo (*D. Jones*), 1 ♀, Castro Paraña. *Exp.* 24 millim.

*4214. **Monodes cenicienta.** (Plate CXXXV. fig. 19.)

Acronycta cenicienta, Dogn. Ann. Soc. Ent. Belg. xli. p. 407 (1897).

♀. Head and thorax grey mixed with black; palpi blackish; tarsi blackish with pale rings; abdomen brownish grey. Fore wing bluish grey irrorated with fuscous and suffused with fuscous brown on basal and medial areas and before the subterminal line; the subbasal line indistinct, waved, from costa to submedian fold, defined by grey on outer side; the antemedial line oblique, double, waved, filled in with grey; orbicular a small white spot defined by blackish; reniform very indistinct, blackish, defined partially by grey; the postmedial line defined on both sides by whitish, bent outwards below costa to just beyond the reniform, excurved to vein 4, then incurved, and with a series of blackish points on the veins beyond it; the subterminal line grey, excurved at vein 7, angled inwards in discal fold and outwards at vein 4, then incurved; a prominent series of small terminal black lunules. Hind wing greyish white, the terminal area suffused with fuscous; cilia white; the underside white irrorated with brown on costal and terminal areas, a small black discoidal spot and curved fuscous postmedial line obsolescent towards inner margin.

Hab. Ecuador, Loja, type † ♀ in Coll. Dognin. *Exp.* 30 millim.

4215. **Monodes stelligera.** (Plate CXXXV. fig. 20.)

Microcœlia stelligera, Schaus, Trans. Am. Ent. Soc. xxi. p. 224 (1894).

♀. Head and thorax dark brown mixed with white and pale yellow; palpi with white rings at extremities of joints; lower part of frons and basal joint of antennæ white; tarsi dark brown ringed with white; abdomen dark brown mixed with whitish, the ventral surface yellowish. Fore wing dark brown mixed with grey-white; subbasal line represented by small yellow spots below costa and cell with another spot beyond them in cell, the antemedial line by small spots below costa and cell and on inner margin; orbicular and reniform round yellow spots, the former small, the latter moderate; postmedial line with small yellow spot on costa, then represented by a double series of points and spot in submedian fold, bent outwards below costa, excurved to vein 4, then incurved, some points beyond it on costa; subterminal line represented by small obliquely placed yellow spots on and below costa, then by a series of points and an irregular mark at tornus, the point below vein 7 nearer termen; a terminal series of points. Hind wing pale brown with a golden gloss; the underside grey-white irrorated with brown, a brown discoidal spot, rather diffused curved postmedial line, and diffused subterminal band.

Hab. Brazil, Castro Paraña (*D. Jones*), 1 ♀. *Exp.* 30 millim.

*4216. **Monodes mesomela.** (Plate CXXXV. fig. 21.)

Monodes mesomela, Dogn. Ann. Soc. Ent. Belg. li. p. 236 (1907).

♂. Head and thorax grey mixed with fuscous brown; palpi black, greyish at tips; tarsi black ringed with white; abdomen grey suffused with fuscous. Fore wing grey slightly tinged with rufous and irrorated with fuscous; subbasal line represented by black points below costa and cell; an incurved black mark defined by whitish on inner side on antemedial area from submedian fold to inner margin; traces of an oblique waved whitish antemedial line; claviform represented by a diffused black streak; orbicular and reniform small, whitish, incompletely defined by black, the former tinged with yellowish, rather oblique elliptical, the latter with fuscous lunule in centre, a quadrate black patch between them; traces of a sinuous line from lower angle of cell to inner margin; postmedial line indistinct, slightly defined by whitish on outer side, bent outwards below costa, excurved to vein 4, then incurved to lower edge of reniform, some white points with black streaks between them beyond it on costa; subterminal line whitish defined by fuscous suffusion on inner side, with oblique black streak beyond it below apex; a terminal series of small black lunules defined by whitish on inner side; cilia fuscous and grey. Hind wing white tinged with brown; a fine black terminal line; cilia with a slight dark line near base; the underside irrorated

with brown, a black discoidal spot and indistinct curved postmedial line.

Hab. Peru, Angasmarca, type † ♂ in Coll. Dognin. *Exp.* 26 millim.

4217. Monodes cadema. (Plate CXXXV. fig. 22.)

Oligia cadema, Schaus, J. N.Y. Ent. Soc. vi. p. 113 (1898).

♀. Head and thorax black-brown mixed with some white, the vertex of head and base of tegulæ tinged with ochreous; palpi black, grey at tips; frons with lateral black bars; tarsi black ringed with white; abdomen grey thickly irrorated with fuscous brown, the basal crest blackish. Fore wing grey thickly irrorated with black and suffused with dark brown to postmedial line and on terminal area, the veins with blackish streaks; subbasal line double filled in with grey, waved, bent outwards at median nervure, from costa to vein 1, antemedial line double filled in with grey, oblique, waved; claviform defined by black above, elongate; orbicular very small, elliptical, ochreous defined by black, a black streak from it to reniform, which is grey defined by black, oblique elliptical; an obliquely curved medial black line; postmedial line double at costa, then indistinct, bent outwards below costa, then minutely waved, excurved to vein 5, then bent inwards to lower extremity of reniform, then strong, outwardly oblique, and slightly excurved at vein 1, some faint grey marks beyond it on costa; an oblique irregular greyish patch from apex; subterminal line indistinct, grey slightly defined by diffused brown on inner side, excurved below vein 7 and at middle, and bent outwards to tornus; a blackish terminal line; cilia brown intersected with blackish. Hind wing pure white; the veins towards termen tinged with brown; the termen suffused with brown from apex to vein 2; a black terminal line except towards tornus; cilia tinged with brown and with series of slight dark spots; the underside with the costal and terminal areas irrorated with black-brown, slight dark marks on costal area at and beyond middle and at apex and in discal fold beyond the cell, a small black discoidal spot and terminal series of small lunules.

Hab. Brazil, Castro Paraña (*D. Jones*), 1 ♀. *Exp.* 30 millim.

4218. Monodes flaviorbis. (Plate CXXXV. fig. 23.)

Monodes flaviorbis, Dogn. Ann. Soc. Ent. Belg. li. p. 236 (1907).

Head and thorax red-brown mixed with greyish; palpi with the 3rd joint fuscous; pectus and legs brown mixed with grey, the tarsi with pale rings; abdomen reddish brown mixed with grey. Fore wing red-brown slightly tinged with grey; subbasal line indistinct, double, waved, from costa to vein 1; antemedial line double, waved, nearly erect; orbicular orange-yellow, defined by blackish, rather quadrate; reniform with concave black and white

line on inner edge, some fuscous in upper and lower parts and two white points at upper extremity; an oblique sinuous line from lower angle of cell to inner margin; postmedial line indistinctly double, strongly bent outwards below costa, excurved to vein 4, then incurved, some slight pale points beyond it on costa; subterminal line indistinct, yellowish, excurved below vein 7 and at middle; a series of white points at extremities of veins; cilia fuscous mixed with grey and with fine white line at base. Hind wing whitish suffused with brown, especially on terminal area; cilia with fine white line at base followed by a brown line; the underside whitish thickly irrorated with brown, a blackish discoidal spot and curved postmedial line.

Hab. S.E. Peru, Carabaya, Oconeque, type † ♀ in Coll. Dognin, Quinton, 1 ♂. *Exp.* 26 millim.

4219. **Monodes callopistrica**, n. sp. (Plate CXXXV. fig. 24.)

♀. Head and thorax red-brown mixed with some pale rufous; abdomen dark brown, the anal tuft rufous, the ventral surface whitish irrorated with fuscous. Fore wing pale rufous largely suffused with red-brown and irrorated with black, leaving the area just below costa and towards tornus pale rufous, the veins of medial area and towards apex with pale streaks; subbasal line represented by blackish spots below costa and cell defined by rufous on outer side; antemedial line black defined by rufous on inner side, slightly angled outwards below costa, then oblique, minutely waved; an oblique whitish streak from median nervure to medial line at submedian fold, representing upper edge of claviform; orbicular and reniform with ochreous centres tinged with rufous and white annuli, the former narrow, oblique **V**-shaped, open above, the latter oblique lunulate, angled inwards on median nervure; a minutely waved oblique black medial line from lower angle of cell to inner margin; postmedial line black defined by ochreous on outer side, bent outwards below costa, then minutely waved, excurved to vein 5, then oblique; subterminal line pale rufous defined on inner side by blackish suffusion below costa and at middle, where it is strongly excurved, angled inwards at discal fold; a fine black terminal line; cilia rufous with a fine pale line at base. Hind wing dark brown; cilia fuscous with a pale line at base; the underside greyish thickly irrorated and suffused with brown, a small black discoidal lunule and indistinct postmedial line.

Hab. Venezuela, 1 ♀ type; Br. Guiana, Potaro R. (*Roberts*), 1 ♀. *Exp.* 28 millim.

*4220. **Monodes acaste.** (Plate CXXXV. fig. 25.)

Noctua acaste, Herr.-Schäff. Aussereur. Schmett. f. 568 (1869).

♀. Head and thorax white mixed with bright rufous and dark brown; palpi with the extremities of 1st and 2nd joints white; frons with lateral white spots; antennæ with the basal joint

white at tip; tibiæ and tarsi ringed with white; abdomen fuscous brown with white segmental rings, the ventral surface irrorated with white. Fore wing black-brown tinged with red and irrorated with white especially on basal area; subbasal line white, from costa to vein 1, forming a small annulus below the cell; antemedial line strong, white, oblique, nearly straight; the medial area with the median nervure and vein 1 streaked with white; orbicular defined by some white on inner side and above and an oblique striga on outer side above median nervure; reniform defined by white, narrow and constricted at middle, with short white streaks from it to postmedial line, which is white, slightly bent outwards below costa and oblique below vein 4, with short white streaks before and beyond it on inner area and some white points beyond it on costa; subterminal line represented by a white mark from vein 3 to tornus, angled inwards at submedian fold; a terminal black line intersected by slight white streaks on the extremities of the veins and cilia, which latter are chequered brown and white at tips. Hind wing fuscous with a greyish tinge; a blackish discoidal spot; cilia with white line at base and white tips, except at apex, with some brown spots on them; the underside white, the basal, costal, and terminal areas fuscous, a blackish discoidal spot and curved minutely waved postmedial line.

Hab. Venezuela; Peru, S. Domingo (*Ockenden*) in Coll. Druce. *Exp.* 32 millim.

*4221. Monodes langia.

Callopistria langia, Druce, P. Z. S. 1890, p. 518; id. Biol. Centr.-Am., Het. ii. p. 502, pl. 96. f. 7.

Head and thorax red-brown; antennæ and legs dark brown; abdomen grey-brown with the anal tuft ochreous. Fore wing red-brown; subbasal line represented by dark striæ from costa and cell; antemedial line dark, defined on each side by white except at costa; medial area white below submedian fold; claviform defined by black; orbicular and reniform defined by white, the former triangular; postmedial line black defined by white on inner side, slightly bent outwards below costa, oblique to discal fold, then incurved, the white on its inner side confluent with the white defining the reniform above and below, some white points beyond it on costa, an oblique white fascia from apex to the angle of postmedial line; subterminal line defined by dark suffusion on inner side, excurved below vein 7 and at middle and bent outwards to tornus; a terminal series of black points; cilia pale. Hind wing brown, the terminal area darker; a dark discoidal lunule; cilia pale.

Hab. Panama, Chiriqui. *Exp.* 24 millim. This species is unknown to me; the head and thorax are white in the figure.

4222. **Monodes bastula.** (Plate CXXXV. fig. 26.)

Semiphora bastula, Schaus, Pr. U.S. Nat. Mus. xxx. p. 102 (1906).

Head and thorax red-brown, the tegulæ slightly tipped with whitish; pectus and legs fuscous brown, the tarsi ringed with white; abdomen fuscous brown, the anal tuft ochreous. Fore wing red-brown; subbasal line indistinct, double filled in with whitish, waved, from costa to vein 1; antemedial line indistinct, waved, oblique, defined by whitish on inner side at costa and with slight black streaks before it on the veins; orbicular and reniform slightly defined by black, the former with incomplete white annulus, round, the latter with its lower part filled in with black and two white points at upper extremity; an indistinct waved medial line, oblique from costa to lower angle of cell; postmedial line double, filled in with whitish towards costa, strongly bent outwards below costa, then minutely waved, incurved below vein 4, some fuscous suffusion and white points beyond it on costa; an indistinct pale subterminal line slightly defined on inner side by fuscous suffusion, excurved below vein 7 and at middle and incurved at discal and submedian folds; the veins at termen with minute dark streaks and white points at their extremities. Hind wing dark cupreous brown; cilia whitish, brown at apex and with brown line through them; the underside whitish, the costal and terminal areas thickly irrorated with brown, a blackish discoidal spot and sinuous waved postmedial line.

♀. Hind wing more suffused with fuscous.

Hab. Brazil, Castro Paraña in Coll. D. Jones. *Exp.* 26 millim.

Subsp. 1. Hind wing white with dark discoidal spot, the terminal area suffused with fuscous.

Hab. Peru, Limbani (*Ockenden*), 1 ♂, Agualani (*Ockenden*), 3 ♂, Carabaya.

*4223. **Monodes tenebrosa.** (Plate CXXXV. fig. 27.)

Monodes tenebrosa, Dogn. Ann. Soc. Ent. Belg. li. p. 237 (1907).

♂. Head and thorax bright rufous mixed with some dark brown; palpi blackish except at extremity of 2nd joint; antennæ blackish; tegulæ with diffused blackish line towards tips; tarsi blackish with pale rings; abdomen dark greyish brown, the basal crest rufous, the genital tufts whitish. Fore wing red-brown tinged with greyish and suffused in parts with dark brown especially on antemedial area and on postmedial costal area; subbasal line double filled in with whitish and curved towards costa, black and curved from cell to vein 1; antemedial line indistinctly double, waved, oblique, filled in with whitish at costa; claviform rufous defined by black and with some rufous in centre; orbicular with fuscous centre and pale annulus defined by black except above,

oblique elliptical; reniform fuscous defined by black at sides, somewhat constricted at middle and with black streak from it to postmedial line; a slight oblique sinuous line from lower angle of cell to inner margin; postmedial line indistinctly double, filled in with whitish at costa, strongly bent outwards below costa and with some white scales beyond it, then minutely dentate with white points beyond it on the veins, slightly angled inwards in discal fold and incurved below vein 4, some pale points beyond it on costa; subterminal line indistinct, pale, defined on inner side by small dentate black marks, excurved below vein 7 and at middle, a short black streak beyond it in discal fold; a terminal series of black striæ; cilia rufous intersected with blackish. Hind wing fuscous brown with a slight reddish tinge; cilia pale brown with a fine pale line at base; the underside greyish, almost wholly suffused and irrorated with dark reddish brown, a dark discoidal spot, diffused curved postmedial line, and fine black terminal line.

Hab. S.E. Peru, Carabaya, S. Domingo, type † ♂ in Coll. Dognin. *Exp.* 34 millim.

4224. **Monodes stygiata**, n. sp. (Plate CXXXV. fig. 28.)

♀. Head and tegulæ red-brown; thorax fuscous black; pectus and legs fuscous and grey, the tarsi ringed with white; abdomen fuscous, ventrally whitish. Fore wing grey-brown suffused with fuscous on basal area and costal half to subterminal line; subbasal line represented by small black marks below costa and cell; antemedial line double filled in with grey, oblique, waved; orbicular and reniform defined by black, the former round, the latter rather constricted at middle; a rather diffused oblique black medial line bent inwards to costa; postmedial line defined by whitish on outer side, bent outwards below costa, excurved to vein 5, then incurved, with short black streaks beyond it on the veins, a black streak to subterminal line below vein 5 and some white points on costa; subterminal line very indistinct, pale, slightly defined on inner side by fuscous suffusion, excurved below vein 7 and at middle; a terminal series of slight black striæ; a fine pale line at base of cilia. Hind wing greyish suffused with fuscous brown, the terminal area darker; a fine pale line at base of cilia; the underside white irrorated with fuscous brown, a black discoidal spot, diffused interrupted postmedial line, and diffused subterminal band with dark patch at discal fold.

Hab. Paraguay, Sapucay (*Foster*), 1 ♀ type. *Exp.* 30 millim.

4225. **Monodes hæmassa**, n. sp. (Plate CXXXV. fig. 29.)

Head, thorax, and abdomen grey suffused with brown; palpi blackish, pale at tips; frons with black bar; tegulæ rufous with slight dark medial line; tarsi fuscous with pale rings. Fore wing grey tinged with purple and with slight dark irroration; a black

point at base; subbasal line double at costa, excurved below costa and ending at submedian fold, with some black scales beyond it above vein 1; antemedial line indistinct, with black points on it, twice angled outwards below costa and in submedian interspace, incurved between those points, angled inwards on vein 1 and excurved above inner margin; orbicular very indistinct, with faint pale annulus, round; reniform with faint pale annulus and black points on its outer edge and more prominent point on inner side of lower part; postmedial line blackish, indistinct, interrupted, minutely dentate, bent outwards below costa, then with series of prominent black points beyond it on the veins, incurved below vein 4, a series of alternating white and rufous streaks beyond it on costa; subterminal line very indistinct, brown with white points beyond it on the veins, somewhat excurved below vein 7 and at middle; a terminal series of small black spots defined by slight pale lunules. Hind wing pale reddish brown; cilia white at tips; the underside white, the costal and terminal areas irrorated with fuscous, a black discoidal spot, rather diffused minutely waved postmedial line, and terminal series of small black lunules.

Hab. Cuba, Santiago (*Schaus*), 2 ♂ type, Baracoa (*Schaus*), 4 ♂, 1 ♀. *Exp.* 30 millim.

*4226. **Monodes miochroa.** (Plate CXXXV. fig. 30.)

Monodes miochroa, D. Jones, Trans. Ent. Soc. 1908, p. 160.

♂. Head and thorax greyish ochreous mixed with black-brown; palpi blackish; frons with lateral black bars above; tegulæ pale ochreous with dark tips; legs blackish, the tarsi ringed with white; abdomen whitish suffused and irrorated with brown leaving pale segmental lines, the dorsal crest blackish. Fore wing brown largely suffused with fuscous; subbasal line represented by double black striæ from costa and cell filled in with pale brown; antemedial line double filled in with pale brown, somewhat oblique and angled inwards on vein 1; claviform represented by a small reddish-brown mark with triangular black spot at its extremity; orbicular narrow, rufous defined by prominent oblique black bars at sides; reniform hardly traceable, with an oblique rufous bar on inner side; postmedial line defined by greyish on outer side from costa to vein 6, then by white, strongly bent outwards below costa, then minutely dentate and produced to white points on the veins, incurved below vein 4, some pale points beyond it on costa; subterminal line indistinct, pale, defined by fuscous suffusion on inner side, excurved below vein 7 and at middle, then with oblique whitish striga to tornus; some whitish points on termen at the veins; cilia fuscous with fine whitish line at base. Hind wing white tinged with brown; a black discoidal spot; an indistinct minutely waved sinuous postmedial line; the terminal area suffused with brown from apex to vein 3 and at submedian fold; a dark terminal line; cilia whitish with a dark line through

them; the underside with the costal and terminal areas to vein 3 irrorated with fuscous, a black discoidal lunule, postmedial waved line excurved below costa and incurved below vein 3, and terminal series of small black lunules.

Hab. Brazil, Castro Paraña, type † in Coll. D. Jones. *Exp.* 24 millim.

4227. Monodes grata.

Elaphria grata, Hübn. Zütr. p. 16, ff. 71, 72 (1827); Smith, Cat. Noct. N. Am. p. 151.
Hadena rasilis, Morr. Proc. Post. Soc. N. H. xvii. p. 158 (1874).
Atethmia subusta, Druce, Biol. Centr.-Am., Het. i. p. 290 (part., nec Hübn.).

Head, thorax, and abdomen red-brown mixed with grey; tegulæ with whitish line near tips. Fore wing red-brown irrorated with grey and fuscous, the veins with slight black streaks; subbasal line defined by white on inner side, from costa to submedian fold; antemedial line double filled in with white, oblique, slightly bent inwards to inner margin; orbicular and reniform with black centres and white annuli, the former small, round, the latter narrow and strongly constricted at middle; a faint diffused obliquely curved medial line; postmedial line defined by white on outer side, excurved from below costa to vein 5, then incurved, some whitish points beyond it on costa; subterminal line pale defined by fuscous suffusion on inner side, excurved below vein 7 and at middle and bent outwards to tornus; a series of minute white points at the extremities of the veins. Hind wing yellowish white tinged with brown especially on terminal area from apex to vein 2; cilia with a fine white line at base; the underside white irrorated with reddish brown, a black discoidal spot and indistinct diffused postmedial line and subterminal band.

Hab. U.S.A., Maryland, Florida, Kansas, Mississippi, 2 ♂, 1 ♀, Texas; Mexico, Jalapa (*Trujillo*), 1 ♂, 1 ♀; Panama, Chiriqui (*Champion*), 1 ♂, Godman-Salvin Coll. *Exp.* 26 millim.

Larva. Head shining pale brown with a curved vertical black band on each lobe. Body robust, joints 5 and 12 enlarged; obscure brown, mottled with darker; a narrow white dorsal line; a white subdorsal speck on joint 5 and a brown one on 6; a slender waved black lateral line, outlining the substigmatal band above.—H. G. D.

4228. Monodes stenonephra, n. sp. (Plate CXXXV. fig. 31.)

Perigea concisa, Druce, Biol. Centr.-Am., Het. ii. p. 481 (part., nec Wlk.).

♂. Head and thorax grey mixed with brown; palpi black, whitish at tips; pectus and legs fuscous grey, the tarsi with slight pale rings. Fore wing grey irrorated with fuscous, the terminal area tinged with reddish brown; subbasal line represented by

slight double dark striæ from costa and cell; antemedial line indistinct, double filled in with grey, oblique to median nervure, then sinuous; orbicular a minute pale annulus with black centre, round; reniform very narrow and constricted at middle, with fuscous centre and pale annulus slightly defined by black; a diffused curved medial shade; postmedial line double filled in with whitish, bent outwards below costa and incurved below vein 4, with slight blackish points beyond it on the veins and pale points on costa; subterminal line very indistinct, whitish, somewhat excurved below vein 7 and at middle; a slight blackish punctiform terminal line; a fine whitish line at base of cilia. Hind wing white, the veins, costal area and terminal area to vein 2 tinged with brown; cilia white with a slight brown line on apical half; the underside with the costal and terminal areas irrorated with brown and black, a small black discoidal spot, curved postmedial line with minute dark streaks on the veins, and terminal series of black points.

Hab. Mexico, Jalapa (*Trujillo*), 1 ♂ type, Coatepec (*Brooke*), 1 ♀, Godman-Salvin Coll.; St. Vincent (*H. H. Smith*), 1 ♂. *Exp.* 28–30 millim.

4229. **Monodes lentilinea**, n. sp. (Plate CXXXV. fig. 32.)

Head and thorax grey tinged with brown and irrrorated with fuscous; palpi blackish, white at tips; pectus and legs fuscous and grey, the tarsi with slight pale rings; abdomen grey tinged with brown. Fore wing grey irrorated with fuscous and tinged with reddish brown especially on medial and terminal areas; subbasal line represented by slight dark striæ from costa and cell defined by grey on outer side; antemedial line defined by grey on inner side, oblique to median nervure, then sinuous; orbicular with fuscous centre and faint pale annulus, very small, round; reniform very narrow and constricted at middle, with white annulus and fuscous irrorated centre; a very indistinct, diffused, obliquely curved medial line; postmedial line indistinct, defined by whitish on outer side, bent outwards below costa and incurved below vein 6, with blackish points beyond it on the veins; subterminal line whitish defined by brown suffusion on inner side, angled outwards at vein 7, excurved at middle and bent outwards to tornus; a terminal series of small black spots defined by slight grey lunules; cilia fuscous and grey. Hind wing white, the terminal area tinged with brown from apex to vein 3; cilia white, tinged with brown on apical half; the underside with the costal area irrorated with brown, a dark discoidal point, indistinct minutely waved postmedial line from costa to vein 4, and terminal series of small black lunules on apical half.

Hab. Brazil, 1 ♀, São Paulo (*Jones*), 1 ♂ type; Paraguay, Sapucay (*Foster*), 1 ♂, 4 ♀. *Exp.* 24–26 millim.

4230. **Monodes targa.** (Plate CXXXVI. fig. 1.)

Atethmia targa, Schaus, J. N.Y. Ent. Soc. vi. p. 115 (1898).

Head and thorax brownish white mixed with red-brown; palpi red-brown, the extremity of 2nd joint pale; legs red-brown; abdomen white tinged with reddish brown. Fore wing violaceous white suffused with red-brown and irrorated with dark brown; traces of a whitish subbasal line from costa to submedian fold; antemedial line double, brown filled in with white, slightly curved; orbicular absent; reniform defined by white, very narrow and constricted at middle; a slight red-brown medial shade; postmedial line double, brown filled in with white, bent outwards below costa, excurved to vein 5, then incurved and touching lower extremity of reniform, some whitish points beyond it on costa; a straight whitish subterminal line from costa before apex to tornus; cilia with a fine white line at base. Hind wing pure semihyaline white, the apex very slightly irrorated with fuscous; a fine dark terminal line except towards tornus; the underside with the costal area and terminal area to vein 3 broadly irrorated with red-brown, a black discoidal point.

Hab. Brazil, Rio Janeiro, 5 ♂, São Paulo (*D. Jones*), 1 ♂; Paraguay, Sapucay (*Foster*), 1 ♂, 1 ♀; Argentina, Gran Chaco, Florenzia (*Wagner*), 1 ♂, 1 ♀. *Exp.* 22–28 millim.

4231. **Monodes atrisigna**, n. sp. (Plate CXXXVI. fig. 2.)

♀. Head fuscous tinged with grey; palpi black, whitish at tips; tegulæ black at base; thorax white slightly tinged with brown and with a few black scales; tarsi brown ringed with white; abdomen white suffused with fuscous except at base. Fore wing white thickly irrorated with cupreous brown, the terminal area suffused with cupreous brown; subbasal line represented by a black point on costa; antemedial line indistinct, interrupted, with some black scales on it and a black point at costa, oblique, almost straight, with traces of another line before it on inner area; a minute black striga in submedian fold before the diffused brown medial line; orbicular white with brownish centre, triangular, defined by black on inner side and with oblong black patch on outer before the reniform, which is small, rather constricted at middle with pale brown centre and white annulus slightly defined by black on outer side, some red-brown suffusion beyond it before the postmedial line, which is white defined by brown on inner side, oblique from costa to vein 6, then erect, slightly sinuous, the whole area beyond it cupreous brown; an indistinct whitish subterminal line from costa to vein 3, angled inwards below costa, then excurved and with slight black streaks beyond it; a fine white line just before termen; cilia white mixed with brown and with slight brown line through them. Hind wing white with rather diffused terminal brown band and

dark terminal line from apex to submedian fold; the underside with the costal area irrorated with brown.

Hab. Argentina, Gran Chaco, Florenzia (*Wagner*), 1 ♀ type, Rioja (*Giacomelli*), 1 ♀. *Exp.* 26 millim.

4232. **Monodes jonea.** (Plate CXXXVI. fig. 3.)

Hadena jonea, Schaus, Pr. U.S. Nat. Mus. xxx. p. 101 (1906).

♂. Head and thorax white mixed with some black scales, the vertex of head and tegulæ tinged with rufous, the metathoracic crest blackish; palpi with brown patch at side of 2nd joint; frons with brown bar; pectus tinged with rufous, the tarsi brown ringed with white; abdomen white slightly irrorated with fuscous and faintly tinged with brown. Fore wing white slightly irrorated with fuscous, the basal and terminal areas tinged with brown; subbasal line represented by rather diffused double blackish striæ from costa and single striga from cell; antemedial line double, oblique, waved; orbicular and reniform white slightly defined by black, the former round with slight brown centre, the latter elliptical with slight dark suffusion in centre; a medial brown shade from costa to median nervure between the stigmata and a diffused dark streak in submedian fold on medial area; postmedial line double filled in with white, the outer line indistinct except at costa, bent outwards below costa, then minutely dentate, excurved to vein 4, then incurved, some white points with black marks between them beyond it on costa, an oblique dark mark from the outermost to excurved part of postmedial line; an indistinct waved whitish subterminal line, excurved below vein 7 and at middle and bent outwards to tornus; a terminal series of blackish striæ; cilia brownish white with series of fuscous spots. Hind wing white, the apical area tinged with brown narrowing to vein 2; a slight postmedial line from costa to vein 6 and a fine terminal line except towards tornus; the underside with the costal area irrorated with brown, a small black discoidal spot, the postmedial line rather diffused, waved, extending to vein 4.

Ab. 1. Fore wing with the medial shade replaced by two black striæ from costa, no streak on medial area; in female the basal and terminal areas suffused with fuscous.—Castro Paraña.

Hab. Brazil, Rio Janeiro, 1 ♂, Castro Paraña in Coll. D. Jones. *Exp.* 32–34 millim.

4233. **Monodes editha.** (Plate CXXXVI. fig. 4.)

Atethmia editha, Schaus, J. N.Y. Ent. Soc. vi. p. 115 (1898).

♂. Head and thorax white mixed with cupreous brown; abdomen white faintly tinged with ochreous and ventrally irrorated with brown, the basal crest tipped with brown. Fore wing white thickly irrorated with cupreous brown, the veins white; subbasal line represented by slight double brown striæ from costa and cell

filled in with white; antemedial line double filled in with white, oblique, straight; orbicular and reniform with brownish centres and white annuli slightly defined by brown, the former erect, elliptical, the latter oblique, elliptical; postmedial line double filled in with white, the inner line somewhat diffused, strongly bent outwards below costa, then oblique, almost straight, some white points beyond it on costa; subterminal line white slightly defined by diffused brown on inner side, straight; a terminal series of slight brown lunules; cilia white. Hind wing pure white; the underside with the costal area slightly irrorated with brown, some blackish points on termen from apex to vein 3.

♀. Hind wing irrorated with brown, the terminal area suffused with brown; cilia with a dark line through apical half.

Hab. Brazil, São Paulo (*D. Jones*), 3 ♂, 1 ♀. *Exp.* 28 millim.

4234. **Monodes lithodia.** (Plate CXXXVI. fig. 5.)

Eustrotia lithodia, Schaus, Trans. Am. Ent. Soc. xxx. p. 154 (1904).

Head and thorax reddish brown mixed with whitish; palpi black, whitish at tips; tibiæ and tarsi blackish ringed with white; abdomen fuscous brown mixed with whitish. Fore wing whitish suffused in parts with cupreous brown and slightly irrorated with black; antemedial line indistinct, dark, double filled in with whitish, oblique, sinuous, with brown patches before it on costa and below submedian fold; orbicular represented by a slight black bar on its outer edge; reniform a diffused whitish patch, defined on inner side and below by blackish; traces of a waved dark medial line from cell to inner margin with slight white marks on it on and below median nervure; postmedial line indistinct, double filled in with whitish, bent outwards below costa, slightly incurved at discal fold, incurved and minutely waved below vein 4, a black mark beyond it in discal fold and some white points on costa; subterminal line whitish, minutely waved, excurved at middle, the area beyond it white suffused with grey; a terminal series of small black lunules; cilia brown and whitish with two slight dark lines at middle. Hind wing fuscous; a fine black terminal line; cilia olive-brown, whitish at tips; the underside white irrorated with purplish fuscous, a slight discoidal lunule and minutely waved postmedial line.

Hab. Trinidad, Cuparo (*Kaye*), 1 ♀; Brazil, São Paulo (*D. Jones*), 1 ♂, 2 ♀. *Exp.* 22 millim. Type † in U.S. Nat. Mus.

*4235. **Monodes thionaris.** (Plate CXXXVI. fig. 6.)

Eustrotia thionaris, Schaus, Trans. Am. Ent. Soc. xxx. p. 155 (1904).

♂. Head and thorax reddish brown mixed with some white; pectus and legs whiter; tarsi dark brown ringed with white; abdomen pale red-brown, ventrally whiter. Fore wing cupreous brown; subbasal line represented by double black striæ from costa

and cell with some blackish suffusion beyond them; antemedial line double, blackish, waved, strongly angled inwards on vein 1 and to inner margin; orbicular defined by a black bar on outer edges, the reniform by black bars on inner and outer edges, and slight white points at upper and lower extremities; a curved blackish medial line with brown band on its outer edge; postmedial line double, black, filled in with white towards costa, strongly bent outwards below costa, then waved, incurved at discal fold, bent inwards below vein 3 to near medial line, then erect to inner margin, some white points and white irroration beyond it on costa; subterminal line formed of rufous and whitish lunules defined on inner side by black marks, with a wedge-shaped black mark below vein 7 extending to near termen, incurved at discal fold, slightly angled outwards at veins 4, 3, then incurved; a terminal series of small black lunules with white points on their inner side and between them on the veins. Hind wing cupreous brown with terminal series of small black lunules defined by whitish on inner side, a black spot at tornus with white bar above it; cilia with fine white line and points at the veins at base; the underside white irrorated with cupreous brown, the apical area suffused with cupreous brown, an indistinct minutely waved postmedial line incurved at submedian fold.

Hab. Brazil, São Paulo (*D. Jones*), type † ♂ in U.S. Nat. Mus. *Exp.* 34 millim.

*4236. **Monodes virescens.** (Plate CXXXVI. fig. 7.)

Photedes virescens, Schaus, Trans. Am. Ent. Soc. xxx. p. 156 (1904).

Head and thorax whitish tinged with grey-green and red-brown; palpi blackish at sides; prothoracic crest brown; pectus and legs whitish tinged with red-brown, the fore tarsi dark brown; abdomen whitish tinged with red-brown. Fore wing pale yellow-green, the basal inner area whitish, the medial area whitish tinged with rufous, the terminal area pale rufous from below apex to vein 2 leaving some green on termen; subbasal line represented by a slight curved dark striga from costa; antemedial line fine, black, oblique, slightly angled at subcostal nervure and bent inwards between submedian fold and vein 1; orbicular absent; reniform represented by two small black spots with an oblique red-brown patch from costa to the inner side of the upper spot; postmedial line fine, blackish, defined by white on outer side towards costa, obliquely incurved from costa to vein 6, then minutely dentate, incurved below vein 4, an oblique white fascia from apex to postmedial line at vein 6, some short brown streaks on costa towards apex; a diffused brownish subterminal line bounding the green area, excurved below vein 7 and at middle, then incurved; a terminal series of slight black striæ; cilia rufous. Hind wing whitish suffused with pale red-brown; the underside whitish irrorated with red-brown especially on costal area, a diffused brown mark on

middle of costa, a slight discoidal spot; postmedial line bent outwards below costa, then minutely waved, incurved below vein 2, some small black lunules on apical part of termen.

Hab. Brazil, Castro Paraña in Coll. D. Jones. *Exp.* 24 millim.

*4237. **Monodes stenelea.** (Plate CXXXVI. fig. 8.)

Photedes stenelea, Schaus, Trans. Am. Ent. Soc. xxx. p. 156 (1904).

♂. Head and thorax dark brown; palpi blackish at sides; pectus and legs grey-brown, the tarsi with pale rings; abdomen red-brown. Fore wing dark brown, the apical area red-brown with oblique inner edge from postmedial line to termen at vein 2; subbasal line represented by a faint grey striga from costa; antemedial line whitish with black points on its outer edge at the veins, sinuous, oblique from costa to submedian fold, then erect; orbicular absent; reniform very narrow and oblique, rufous defined by black, strongly on inner side; postmedial line represented by an oblique white bar from costa to vein 6 defined by blackish on outer side, then indistinct and slightly defined by whitish on outer side, bent inwards to lower extremity of reniform and sinuous to inner margin; an indistinct whitish subterminal line oblique towards costa, excurved at middle and bent outwards to tornus; some black points on termen; cilia black-brown intersected with rufous, wholly rufous at apex. Hind wing pale reddish suffused with brown especially on terminal area; a faint discoidal spot and slight dark terminal line; the underside paler with dark discoidal spot.

Hab. Brazil, São Paulo in Coll. D. Jones. *Exp.* 20 millim.

4238. **Monodes costipuncta.** (Plate CXXXVI. fig. 9.)

Photedes costipuncta, Schaus, Trans. Am. Ent. Soc. xxx. p. 156 (1904).

♂. Head pale purplish, the palpi with black marks at side of 2nd joint, the frons with lateral black bars; thorax grey-white tinged with greenish and mixed with purplish brown; pectus whitish; legs pale purplish mixed with black, the tarsi black ringed with white; abdomen grey mixed with fuscous, the basal crest tipped with black. Fore wing greyish suffused with pale olive-green, some fuscous suffusion on antemedial area from cell to inner margin, the veins of terminal area slightly streaked with black; subbasal line black slightly defined by white on outer side, curved, from costa to vein 1; antemedial line indistinctly double filled in with whitish, minutely waved, oblique from costa to just below cell, then erect; orbicular and reniform grey with slight white annuli defined by a few dark scales, the former oblique elliptical; an oblique wedge-shaped black patch from costa to between the stigmata, its extremity bent outwards as a streak on median nervure below the reniform; an indistinct oblique sinuous line from lower angle of cell to inner margin; postmedial line slightly defined by whitish on outer side, bent outward below costa, excurved to vein 4,

then incurved, some white points with slight brown streaks between them beyond it on costa; an indistinct pale subterminal line defined on inner side by fiery red suffusion except towards costa, excurved below vein 7 and at middle and bent outwards to tornus and with a black patch beyond it in submedian interspace; a terminal series of slight dark lunules; cilia dark brown. Hind wing whitish tinged with brown, the veins and apical area suffused with brown; a brown terminal line; cilia whitish with a slight brown line through them. Underside of both wings with the costal area tinged with purple and irrorated with black; hind wing with black discoidal spot, crenulate postmedial line, and terminal series of black lunules.

Hab. Brazil, São Paulo (*D. Jones*), 2 ♂. *Exp.* 24 millim.

*4239. Monodes ditrigona. (Plate CXXXVI. fig. 10.)

Monodes ditrigona, D. Jones, Trans. Ent. Soc. 1908, p. 162.

♂. Head and tegulæ deep rufous; thorax silvery white; fore and hind legs rufous, the tibiæ suffused with dark brown; abdomen brownish white, the basal crest rufous. Fore wing silvery white faintly tinged with rufous and with slight dark irroration; an oblique triangular black-brown patch on base of costa with sinuous edges, its apex on median nervure before middle where it expands into a small triangular mark, with traces of the oblique waved antemedial line from it to inner margin; claviform represented by a slight curved black mark defining its extremity; orbicular triangular, defined slightly by black, open below; reniform defined on inner side by a fine black bar with oblique wedge-shaped black-brown patch from costa to its upper extremity; postmedial line very indistinct, double, strongly bent outwards towards costa, then minutely waved, excurved to vein 4, then bent inwards to lower angle of cell; faint traces of a whitish subterminal line excurved below vein 7 and at middle; a terminal series of minute black points. Hind wing pure white; the underside with the costal area tinged with rufous, a small discoidal spot, traces of a postmedial line from costa to vein 7 and series of minute points on the veins, a terminal series of points from apex to vein 2.

Hab. Brazil, Castro Paraña, type † ♂ in Coll. D. Jones. *Exp.* 32 millim.

Sect. IV. Antennæ of male laminate; thorax with the crests large.

*4240. Monodes bucephalina.

Axylia bucephalina, Mab. Bull. Soc. Philom. (7) ix. p. 63 (1885); id. N. Arch. Mus. (3) i. p. 151, pl. xi. f. 10.

♂. Head and thorax clothed with ochreous grey and fuscous black scales; pectus, legs, and abdomen ochreous, the last with

fuscous black and grey crest at base. Fore wing fuscous black irrorated with grey; some ochreous at base of inner margin; the antemedial line black, obsolete except from submedian fold to inner margin, angled inwards on vein 1 and outwards above inner margin; the postmedial line arising at middle of costa, sinuous and oblique to vein 2 where it emits a streak to termen, then retracted to join the antemedial line in submedian fold and again

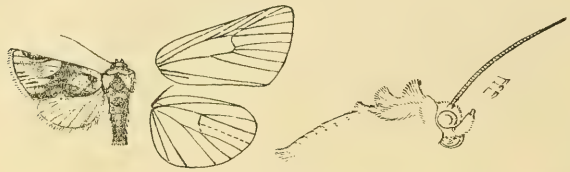


Fig. 139.—*Monodes bucephalina*, ♂. ½.

angled outwards at vein 1; the apical area down to vein 2 buff, with a triangular grey white-streaked patch on costa defined by an oblique blackish line on inner side; a short black streak before termen above vein 4, a more prominent one above vein 2 and a fine streak on vein 1. Hind wing yellowish white, the inner area and termen yellower, some fuscous suffusion near tornus.

Hab. Patagonia, Santa Cruz, type † ♂ in Mus. Paris. *Exp.* 30 millim.

Genus **NEOMILICHIA**, nov.

Type, *N. hylea*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and moderately scaled, the 3rd moderate; frons with slight rounded prominence with corneous plate below it; eyes large, rounded; antennæ of male ciliated; build slender; head and thorax clothed chiefly with scales, the pro- and metathorax with spreading crests; tibiæ moderately fringed with hair; abdomen with dorsal crest at base only. Fore wing with the apex rectangular, the termen evenly curved and slightly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Hind tibiæ of male greatly dilated and rather flattened and grooved, the spurs short, the inner spurs dilated.

4241. **Neomilichia caternaulti.**

Perigea caternaultii, Guen. Noct. i. p. 233 (1852).
Celæna fervens, Wlk. x. 266 (1856).
Celæna fuscata, Butl. Trans. Ent. Soc. 1879, p. 23.
Celæna dentilineata, Butl. Trans. Ent. Soc. 1879, p. 24.

Head and thorax red-brown slightly tinged with grey; palpi with pale rings at extremities of joints; lower part of frons white;

pectus and legs whitish, fore legs suffused with brown, hind tibiæ irrorated with brown and with dark spots near base and extremity and on spurs, the tarsi with dark bands; abdomen ochreous white dorsally suffused with brown, ventrally irrorated with brown. Fore wing brown suffused with purple and slightly irrorated with greyish; subbasal line represented by slight double dark striæ from costa; antemedial line very indistinct, double at costa, oblique to submedian

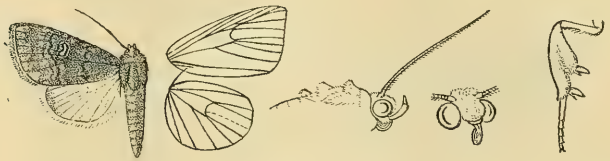


Fig. 140.—*Neomilichia caternaulti*, ♂. $\frac{3}{2}$.

fold, then erect; orbicular with traces of a dark annulus, round; reniform small with rufous centre and indistinct diffused black outline obscured by the diffused medial line, which is oblique from costa to lower angle of cell, then incurved; postmedial line double filled in with greyish, the outer line indistinct except at costa and with series of black points on it, bent outwards below costa, slightly incurved at discal fold, incurved below vein 4, some pale points beyond it on costa; subterminal line defined by dark suffusion on its inner side, angled outwards at vein 7, excurved and slightly dentate at middle; a terminal series of slight black lunules; cilia with series of minute white points at base. Hind wing white with terminal brown band from apex to vein 2, in female wholly tinged with brown, the terminal area darker; cilia yellowish white; the underside white, the costal and terminal areas, except towards tornus, tinged with ochreous and irrorated with brown, a slight discoidal point, postmedial sinuous line with minute dark streaks on the veins, and terminal series of small black lunules.

Ab. 1. *fuscata*. Fore wing with inverted comma-shaped white mark in centre of reniform.

Hab. Venezuela (*Dyson*), 1 ♀ type *fervens*; Br. Guiana, Rockstone (*Kayé*), 1 ♀; Brazil, Amazons, R. Madeira, Statoro (*Trail*), 2 ♀, R. Negro, Marapata (*Trail*), 1 ♂ type *fuscata*, R. Jutahi (*Trail*), 1 ♀, R. Purus, Paricatuba (*Trail*), 1 ♀ type *dentilineata*. *Exp.* 22–28 millim.

Sect. II. Hind tibiæ of male with the inner spurs very long.

4242. Neomilichia hylea.

Noctua hylea, Cram. Pap. Exot. iv. p. 48, pl. 312. f. E (1782).

Head and thorax yellow tinged with rufous and mixed with brown; sides of palpi and frons brown; fore legs brown; abdomen

yellowish white tinged with brown. Fore wing yellow irrorated with red, with diffused oblique reddish-brown bands from costa to median nervure before antemedial line and at middle and a wedge-shaped patch from lower angle of cell to apex and tornus; subbasal line indistinct, red, from costa to submedial fold; antemedial line blackish, oblique, waved, angled inwards on vein 1; orbicular with faint yellowish annulus, round; reniform a rather narrow

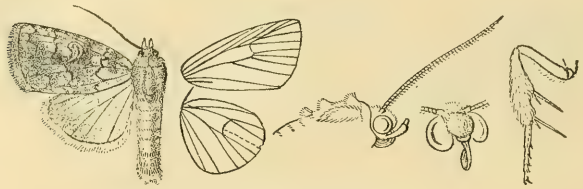


Fig. 141.—*Neomilichia hylea*, ♂. $\frac{3}{4}$.

yellow lunule with its centre defined by red and with white striga at lower angle of cell; postmedial line brown slightly defined by yellow on outer side and with yellow spot at costa, strongly bent outwards below costa, then minutely dentate and produced to dark streaks on the veins, strongly incurved below vein 4, some yellowish points beyond it on costa; subterminal line dark red-brown, rather diffused, angled outwards at veins 7, 6, 4, 3, 2 and incurved at discal and submedian folds; a dark brown terminal line; cilia brown. Hind wing white, the terminal area suffused with brown from apex to vein 2; the underside white, the costal area irrorated with rufous, a slight discoidal spot and rather diffused postmedial line from costa to vein 2.

Hab. Surinam; Brazil, Amazons, Cararaucu (*Trail*), 1 ♂, Manãos (*Trail*), 1 ♀. *Exp.* 22 millim.

Sect. III. Hind tibiæ of male normal.

4243. Neomilichia veprecola.

Protheodes veprecola, Swinh. P. Z. S. 1885, p. 456; Hmpsn. Moths Ind. ii. p. 319.

Head and thorax red-brown, slightly mixed with greyish and fuscous; palpi blackish except at tips; pectus and legs greyish suffused with fuscous; abdomen red-brown. Fore wing red-brown mixed with whitish and some fuscous; subbasal line represented by a slight pale striga from costa; antemedial line double, brown filled in with whitish, waved, angled inwards in cell and on vein 1; orbicular and reniform with rufous centres and whitish annuli defined by blackish, the former round; postmedial line double filled

in with whitish, bent outwards below costa, then dentate, incurved at discal fold and oblique below vein 4; subterminal line whitish, rather diffused, slightly angled inwards at discal and submedian folds; a terminal series of black points; cilia brown and whitish, a

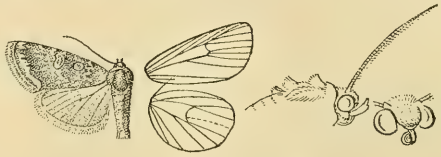


Fig. 142.—*Neomilichia veprecola*, ♂. ⅔.

fuscous line near base. Hind wing whitish suffused with red-brown; the underside white irrorated with brown except on inner area.

Hab. Bombay, Kutch, 2 ♀, Poona (*Swinhoe*), 7 ♂, 7 ♀ type; Madras, Cuddapah (*Campbell*), 1 ♀. *Exp.* 20–22 millim.

Genus **HADJINA**.

Type.

Hadjina, Staud. Iris, iv. p. 286 (1891) ..... *lutosa*.

Proboscis fully developed; palpi upturned, the 2nd joint slender, reaching vertex of head and moderately fringed with scales in front, the 3rd short; frons smooth; eyes large, rounded; antennæ of male typically ciliated; build slender; head and thorax clothed almost entirely with scales, the pro- and meta-thorax with spreading crests; legs moderately fringed with hair; abdomen with dorsal crest at base only. Fore wing rather short and broad, the apex rounded, the termen evenly curved and very slightly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from well below middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male laminate.

4244. **Hadjina radiata**.

Caradrina radiata, Leech, Trans. Ent. Soc. 1900, p. 120.

♂. Head and thorax ochreous tinged with rufous and mixed with black; palpi and frons blackish at sides; tegulæ with slight dark medial line; tarsi blackish with pale rings; abdomen greyish suffused with brown, the basal crest black. Fore wing ochreous tinged with rufous and suffused in parts with black especially in and just below cell and on terminal area, the costal area irrorated with grey, the veins slightly streaked with black; subbasal line represented by double black striæ from costa and cell; antemedial line indistinct, double, oblique, waved; claviform narrow, defined by black at extremity only; orbicular and reniform with pale annuli

defined by black and their centres incompletely defined by black, the former oblique elliptical, the latter slightly angled inwards on median nervure; an indistinct medial line oblique from costa to lower angle of cell, then waved; postmedial line rather indistinct, double, strongly bent outwards below costa, then oblique, minutely waved and produced to black and white points on the veins, some

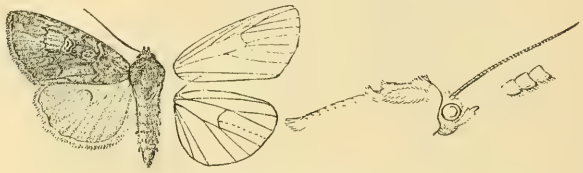


Fig. 143.—*Hadjina radiata*, ♂. ½.

pale points beyond it on costa; subterminal line represented by a series of faint pale marks in the interspaces with fuscous suffusion before and beyond them; a terminal series of small black lunules; cilia with a fine pale line at base. Hind wing whitish suffused with reddish brown; an indistinct dark discoidal spot, fine terminal line and fine pale line at base of cilia; the underside whitish tinged with red-brown and irrorated with fuscous, a black discoidal spot, rather diffused postmedial line, and terminal series of small black lunules.

Hab. W. China, Pu-tsu-fang, 3 ♂ type. *Exp.* 36–40 millim.

Sect. II. Antennæ of male ciliated.

A. Fore wing with the orbicular rounded.
  a. Fore wing with the medial line indistinct or absent.
    a^1. Fore wing not suffused with fiery red.
      a^2. Hind wing wholly tinged with brown.
        a^3. Fore wing with the reniform filled in with white ..... *biguttula.*
        b^3. Fore wing with the reniform not filled in with white.
          a^4. Fore wing with dark streaks in interspaces of terminal area.
            a^5. Fore wing with wedge-shaped rufous marks on terminal area ..... *carcaroda.*
            b^5. Fore wing without wedge-shaped rufous marks on terminal area ..... *illustrata.*
          b^4. Fore wing without dark streaks in interspaces of terminal area.
            a^5. Hind wing not ochreous.
              a^6. Fore wing with the inner area cupreous red ..... *cupreipennis.*
              b^6. Fore wing with the inner area not cupreous red.
                a^7. Fore wing without blackish mark in lower part of cell between orbicular and reniform.
                  a^8. Fore wing purplish red-brown ... *chinensis.*

a^8. Fore wing fuscous brown.
a^9. Fore wing with the reniform whitish ..... *vichti.*
b^9. Fore wing with the reniform grey..... *cinerea.*
c^8. Fore wing reddish ochreous irrorated with brown.
a^9. Fore wing with the postmedial line defined by whitish on outer side ..... *lutosa.*
b^9. Fore wing with the postmedial line defined by whitish on inner side ..... *beata.*
b^7. Fore wing with blackish mark in lower part of cell between orbicular and reniform ..... *atrinota.*
b^5. Hind wing ochreous tinged with brown. *modestissima.*
b^2. Hind wing white, the terminal area suffused with brown.
a^3. Fore wing with the subterminal line excurved at middle.
a^4. Fore wing with the postmedial line oblique below vein 4 ..... *viscosa.*
b^4. Fore wing with the postmedial line evenly curved from costa to inner margin..... *palæstinensis.*
b^3. Fore wing with the subterminal line not excurved at middle ..... *poliastis.*
b^1. Fore wing suffused with fiery red.
a^2. Fore wing with the reniform not filled in with white ..... *ferruginea.*
b^2. Fore wing with the reniform filled in with white ..... *pyroxantha.*
b. Fore wing with prominent rather diffused dark medial line..... *grisea.*
B. Fore wing with the orbicular very oblique and produced at lower extremity, large ..... *pallida.*

4245. **Hadjina biguttula.** (Plate CXXXVI. fig. 11.)

Mamestra biguttula, Motsch. Bull. Mosc. xxxix. i. p. 194 (1866).

Head and thorax very pale red; abdomen greyish tinged with pale red. Fore wing pale red very slightly irrorated with black; antemedial line indistinct, double filled in with whitish, waved, somewhat oblique; orbicular and reniform white slightly defined by brown, the former small, round, the latter constricted at middle; postmedial line very indistinct, with white point at costa, then defined on outer side by some white scales and more distinctly defined by white towards inner margin, bent outwards below costa, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line very indistinct, defined by whitish on outer side towards costa and inner margin, excurved below vein 7 and at middle; cilia with series of slight fuscous spots at tips. Hind wing ochreous white suffused with pale brown; the underside grey-white, the costal and terminal areas suffused and irrorated with

pale red, a slight dark discoidal lunule and diffused sinuous postmedial line.

Hab. Japan, Tsuruga (*Leech*), 1 ♀, Tokio (*Maries*), 1 ♀, Yokohama (*Fenton*, *Pryer*), 3 ♂, 2 ♀; Corea, Gensan (*Ito*), 1 ♂. *Exp.* 28–36 millim.

*4246. Hadjina carcaroda. (Plate CXXXVI. fig. 12.)

Xanthoptera carcaroda, Dist. Entom. 1901, p. 284.

♀. Black-brown. Fore wing with indistinct grey dentate antemedial line; claviform and orbicular faintly defined by grey, the latter round; reniform faintly outlined with grey and constricted at middle; a very highly dentate indistinct grey postmedial line, bent outwards below costa, and inwards below vein 3; the interspaces streaked with black, on terminal area defining obscure irregular dentate rufous marks longer below veins 5 and 6; a terminal series of black striæ. Hind wing fuscous brown, the cilia grey at tips; the underside grey, thickly mottled with brown, a discoidal spot and sinuous dentate postmedial line.

Hab. Transvaal, Lydenburg, type † ♀ in Coll. Distant. *Exp.* 30 millim.

*4247. Hadjina illustrata.

Caradrina illustrata, Staud. Stett. ent. Zeit. 1888, p. 256; id. Rom. Mém. vi. p. 489, pl. 8. f. 11.; id. Cat. Lép. pal. p. 198.
Segetia albopicta, Græs. Berl. ent. Zeit. xxxvii. p. 226 (1892); Staud. Cat. Lep. pal. p. 170.

♀. Head and thorax cupreous red-brown mixed with white and blackish; pectus and legs blackish, the tarsi ringed with white; abdomen grey suffused with brown, the ventral surface blackish irrorated with white. Fore wing with the cell and costal area deep cupreous red-brown irrorated with a few white scales, the inner and postmedial areas pale rufous, the terminal area cupreous brown suffused with black, the veins with dark streaks, the interspaces of terminal area with red-brown streaks, above vein 3 extending to the cell; subbasal line very faint, white, from costa to median nervure; traces of a white antemedial line, bent inwards on subcostal nervure, then oblique, waved; orbicular with slight white annulus and whitish centre, small, round; reniform with white centre, its lower part defined by a black and white annulus incomplete above, strongly constricted at middle; postmedial line represented by a series of white points on the veins, bent outwards below costa and oblique below vein 4, some whitish points beyond it on costa; subterminal line absent; cilia black with series of minute white streaks at base. Hind wing white tinged with brown, the terminal area darker from apex to vein 2, the veins of terminal area with dark streaks; a black terminal line; cilia white mixed with blackish; the underside whitish, the costal area tinged with

rufous, the terminal area with fuscous from apex to vein 2, a dark discoidal point.

Hab. E. Siberia, Amurland, Ussuri in Coll. Püngeler. *Exp.* 32 millim.

4248. Hadjina cupreipennis. (Plate CXXXVI. fig. 13.)

Hattia cupreipennis, Moore, Lep. Atk. p. 112 (1882); Hmpsn. Moths Ind. ii. p. 251.

Head and thorax fiery red mixed with dark brown and some grey; abdomen dark brown. Fore wing deep cupreous red shading to brown mixed with grey on costal and terminal areas; subbasal line represented by a slight dark striga from costa; antemedial line very indistinct, waved; claviform absent; orbicular and reniform whitish irrorated with brown and very faintly defined by brown, the former round, the latter somewhat quadrate; postmedial line very indistinct, dark, bent outwards below costa; then produced to dark streaks with grey points on them on the veins, incurved below vein 4; hardly a trace of the subterminal line; a fine punctiform black terminal line. Hind wing glossy yellowish brown; a fine dark terminal line and slight pale line at base of cilia; the underside pale tinged with red and thickly irrorated with brown, a small black discoidal lunule and traces of curved postmedial line.

Hab. Punjab, Murree (*Harford*), 1 ♀; Sikhim, 2 ♂, 3 ♀ type. *Exp.* 30–36 millim.

4249. Hadjina chinensis.

Perigea chinensis, Wllgrn. Wien. ent. Mon. iv. p. 169 (1860).
Segetia mandarina, Staud. Rom. Mém. vi. p. 482, pl. ix. f. 4 (1892); id. Cat. Lep. pal. p. 170.
Segetia sareptæ, Græs. Berl. ent. Zeit. xxxii. p. 350 (1888), nec Guen.
Amyna pulverea, Leech, Trans. Ent. Soc. 1900, p. 114.

♂. Head and thorax grey mixed with purple-brown; palpi and sides of frons blackish; tarsi blackish with pale rings; abdomen greyish ochreous suffused with brown. Fore wing purplish red-brown irrorated with grey, the veins with slight dark streaks; subbasal line purple-brown defined by whitish on outer side, from costa to submedian fold; antemedial line indistinctly double filled in with whitish, slightly waved; claviform absent; orbicular and reniform with diffused whitish annuli, undefined, the former small, rather constricted at middle, the latter slightly angled inwards on median nervure and with dark point on its lower edge; postmedial line defined by whitish scales on outer side and with prominent white striga from costa, bent outwards below costa, then produced to short dark streaks with white points on them on the veins, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line white defined by deeper brown on inner side, slightly angled outwards at vein 7 and excurved at middle; the

termen with series of white points at extremities of veins with faint dark striæ between them. Hind wing pale cupreous brown; the cilia white tinged with cupreous brown; the underside grey tinged and irrorated with brown, a small discoidal spot, sinuous postmedial line, and traces of diffused subterminal line.

Hab. E. Siberia, Amurland, 2 ♂, Ussuri; Corea; N. China; Centr. China, Ichang (*Hobson*), 1 ♀; W. China, Ni-tou, 1 ♂, Omei-shan, 1 ♀, Ta-chien-lu (*Pratt*), 2 ♀. Moupin (*Kricheldorff*), 2 ♂ type *pulverea*; Kashmir, Scinde Valley (*Leech*), 1 ♂, 1 ♀, Goorais Valley (*Leech*), 1 ♀; Punjab, Simla (*Harford*), 2 ♂, 1 ♀, Murree (*Harford*), 1 ♂. *Exp.* 26–32 millim.

*4250. **Hadjina vichti.** (Plate CXXXVI. fig. 14.)

Amphipyra wichti, Hirschke, Jahresber. Wien. ent. Ver. 1903, p. 41, pl. i. f. 4.

♂. Head and thorax black-brown mixed with grey; tarsi black ringed with white; abdomen grey irrorated with fuscous, the basal crest blackish at tip. Fore wing black-brown irrorated with grey; subbasal line represented by double black striæ filled in with whitish from costa and cell; antemedial line black defined by whitish on inner side, strongly excurved in submedian interspace and excurved at vein 1; orbicular with whitish annulus defined by black, round; reniform whitish irrorated with fuscous and with waved black outline constricted at middle; postmedial line black defined by whitish on outer side, bent outwards below costa, then dentate and produced to white points on the veins, incurved below vein 4, some white points beyond it on costa; subterminal line much interrupted, white defined on inner side by very slight dentate black marks, slightly angled outwards at vein 7 and excurved at middle; a fine terminal black line; cilia with a series of white points at base. Hind wing whitish suffused with brown, the terminal area fuscous; cilia whitish with a fuscous line through them; the underside whitish irrorated with fuscous, a diffused dark postmedial line and diffused subterminal band.

Hab. Spain, Murcia, type † ♂ in Coll. Püngeler. *Exp.* 34 millim.

4251. **Hadjina cinerea**, n. sp. (Plate CXXXVI. fig. 15.)

♂. Head and tegulæ pale fulvous; thorax dark brown mixed with grey and a few black scales; tarsi with pale rings; abdomen grey-brown, the anal tuft ochreous. Fore wing dark brown suffused with grey and irrorated with black; subbasal line represented by a slight grey striga from costa; antemedial line very ill-defined, grey, diffused, waved; claviform absent; orbicular and reniform grey irrorated with black, undefined, the former round, the latter somewhat constricted at middle; postmedial line very ill-defined, grey, diffused, bent outwards below costa and oblique below vein 4; subterminal line very indistinct, grey faintly diffused by blackish on

inner side, excurved below vein 7 and at middle; a terminal series of slight black points. Hind wing silky fuscous grey, the cilia slightly paler with a faint black discoidal spot and traces of post-medial line.

Hab. Sikhim, 1800′ (*Dudgeon*), 1 ♂ type. *Exp.* 26 millim.

4252. Hadjina lutosa.

Hadjina lutosa, Staud. Iris, iv. p. 286, pl. 4. f. 1 (1891); id. Cat. Lep. pal. p. 170.

Head and thorax ochreous mixed with bright rufous; tarsi brown ringed with white; abdomen ochreous tinged with brown. Fore wing reddish ochreous thickly irrorated with red-brown; a slight waved subbasal brown line from costa to submedian fold; a waved brown antemedial line, angled inwards on vein 1, then strongly excurved; claviform small, slightly defined by brown; orbicular yellowish defined by brown, round; reniform indistinct, defined by

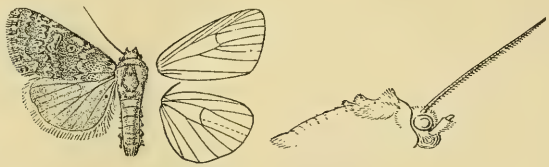


Fig. 144.—*Hadjina lutosa*, ♂. ½.

brown, its centre also defined by brown, constricted at middle; a diffused brown medial shade; postmedial line brown slightly defined by yellowish on outer side, bent outwards below costa, then dentate, oblique below vein 4, some ochreous points beyond it on costa; subterminal line yellowish defined on inner side by brown suffusion, excurved below vein 7 and at middle; a terminal series of minute brown lunules. Hind wing ochreous suffused with reddish brown especially on terminal area; traces of a discoidal point, punctiform postmedial line and diffused subterminal line; the underside paler thickly irrorated with brown, a dark discoidal lunule and rather diffused slightly sinuous postmedial line.

Ab. 1. Greyer, irrorated and suffused with fuscous.—Taurus.

Hab. Asia Minor, Taurus, 1 ♂, 2 ♀; Syria, Mardin, 2 ♂. *Exp.* 34–36 millim.

4253. Hadjina beata. (Plate CXXXVI. fig. 16.)

Thalpochares beata, Staud. Iris, viii. p. 342 (1895); id. Cat. Lep. pal. p. 228.

♂. Head and thorax rufous mixed with ochreous; lower part of frons whitish; abdomen ochreous white tinged with rufous.

Fore wing reddish ochreous thickly irrorated with rufous; antemedial line hardly traceable, pale, bent inwards to costa; orbicular and reniform faintly defined by whitish, the former small, round, the latter strongly constricted at middle and with dark mark in its lower part; a faint rufous medial shade, oblique to lower angle of cell, then incurved; postmedial line very indistinct, rufous with slight dark points on the veins and defined by whitish on inner side, some whitish points beyond it on costa; traces of a punctiform whitish subterminal line; terminal area slightly darker; cilia browner, white at tips. Hind wing whitish tinged with pale rufous.

Hab. W. Turkestan, Turcomania; E. Turkestan, Kashgar, 1 ♂. *Exp.* 26 millim.

4254. **Hadjina atrinota**, n. sp. (Plate CXXXVI. fig. 17.)

Head and thorax reddish brown mixed with grey; tarsi fuscous with pale rings; abdomen grey-brown with a slight ochreous tinge in female. Fore wing dull reddish brown suffused with grey; subbasal line represented by two blackish striæ from costa, in female filled in with grey; antemedial line indistinct, slightly defined by grey on inner side, waved; claviform absent; orbicular hardly traceable in male, round, in female filled in with grey; reniform small with slight grey annulus, in female larger, its centre defined by fuscous and with a black streak between it and reniform above median nervure; a diffused dark medial line, oblique from costa to median nervure, almost obsolete in female; postmedial line defined by grey on outer side, bent outwards below costa, then with slight dark points beyond it on the veins, slightly incurved at discal fold, incurved below vein 4, less distinct in female, some pale points beyond it on costa; subterminal line pale defined by fuscous suffusion on inner side, angled outwards at vein 7 and excurved at middle; a slight punctiform black terminal line; cilia with a fine pale line at base. Hind wing grey suffused with brown; a fine dark terminal line; cilia whitish with a slight brown line near base; the underside whitish irrorated with brown, a black discoidal lunule, sinuous postmedial line, and traces of diffused subterminal line, the markings less distinct in female.

Hab. Br. E. Africa, Kikuyu, Nairobi (*Crawshay*), 1 ♂ type, Eb Urru (*Betton*), 2 ♀. *Exp.* ♂ 28, ♀ 32 millim.

4255. **Hadjina modestissima.**

Apamea modestissima, Snell. Tijd. v. Ent. xx. p. 26, pl. 2. f. 14 (1877).
Hipœpa opacaria, Swinh. Trans. Ent. Soc. 1890, p. 264, pl. 8. f. 3; Hmpsn. Moths Ind. ii. p. 266.

Head and thorax bright rufous; pectus paler; abdomen whitish tinged with rufous, the basal crest rufous. Fore wing bright rufous; subbasal line indistinct, waved, from costa to submedian

fold; antemedial line brown, oblique, waved; orbicular and reniform indistinct, greyish, slightly defined by red-brown, the former round; a diffused red-brown medial shade, oblique from costa to just beyond the reniform, then inwardly oblique; postmedial line red-brown, strongly bent outwards below costa, then produced to slight streaks on the veins, oblique, slightly incurved at discal fold and below vein 4, some slight pale points beyond it on costa; subterminal line defined by red-brown suffusion on inner side, angled outwards at veins 7, 6, excurved and minutely waved at middle; a terminal series of slight brown lunules. Hind wing ochreous tinged with brown especially on terminal area; a fine brown terminal line; the underside white, the costal area and terminal area to vein 2 suffused with rufous, faint diffused waved rufous postmedial and subterminal lines, the former extending to vein 4, the latter to vein 2.

Hab. Burma, Rangoon (*Scott*), 1 ♂, 1 ♀ type *opacaria*; Java; Celebes. *Exp.* ♂ 30, ♀ 36 millim.

4256. Hadjina viscosa.

Mythimna viscosa, Frr. Neue Beitr. i. p. 39, pl. 21. f. 3 (Aug. 1831); Staud. Cat. Lep. pal. p. 170.
Mythimna implexa, Treit. Schmett. Eur. x. 2, p. 73 (1835), nec Hübn.; Dup. Lép. Fr., Suppl. iv. p. 98, pl. 58. f. 7.

Head and thorax red-brown mixed with grey scales; tarsi fuscous with pale rings; abdomen ochreous. Fore wing red-brown slightly irrorated with greyish ochreous; subbasal line absent; antemedial line hardly traceable, greyish, waved; claviform absent; orbicular and reniform small with faint grey annuli, undefined, the former oblique elliptical, the latter constricted at middle; postmedial line very indistinct, slightly defined by grey on outer side and with prominent grey striga from costa, bent outwards below costa and oblique below vein 4, some pale points beyond it on costa; subterminal line very indistinct, pale, angled outwards at vein 7 and slightly excurved at middle; a terminal series of blackish points; cilia with a fine pale line at base. Hind wing white, the termen tinged with pale red-brown from apex to submedian fold, in female almost entirely suffused with brown; the underside with the costal area irrorated with red.

Ab. 1. Much more ochreous or grey irrorated with fuscous and with hardly a trace of rufous; fore wing with the ante- and postmedial lines more distinct, the former angled outwards in submedian fold and above inner margin and inwards on vein 1, a dark patch sometimes present between orbicular and reniform. —Persian Gulf.

Hab. Spain, Andalusia; Sicily; Canaries; Syria, 3 ♂, 1 ♀; Persian Gulf, Fao (*Cuming*), 7 ♂, 2 ♀; Sind, Karáchi (*T. R. Bell*), 1 ♂, 2 ♀. *Exp.* 28–34 millim.

4257. Hadjina palæstinensis. (Plate CXXXVI. fig. 18.)

Segetia palæstinensis, Staud. Iris, vii. p. 277 (1894); id. Iris, x. p. 285, pl. 9. f. 16; id. Cat. Lep. pal. p. 170.

♂. Head and thorax whitish mixed with brown; palpi with the 2nd joint suffused with fuscous at sides; abdomen grey suffused with brown. Fore wing grey suffused with fuscous and brown and irrorated with a few white scales; subbasal line absent; antemedial line very indistinct, double, oblique, waved; claviform and orbicular absent; reniform represented by a faint irregular whitish lunule; a faint diffused dark medial line, oblique from costa to lower angle of cell; postmedial line indistinctly double filled in with white, bent outwards and obsolescent below costa, then oblique and slightly curved, some white points beyond it on costa; a faint pale subterminal line slightly defined by brown suffusion on inner side, somewhat waved; a fine waved black terminal line with white points at the extremities of the veins; cilia fuscous and grey, with fine whitish line at base and traces of a whitish line near tips. Hind wing whitish, the veins, costal and terminal areas suffused with fuscous brown; cilia yellowish white; the underside white, the costal and terminal areas irrorated with brown, a dark discoidal spot and traces of a postmedial line and diffused subterminal band from costa to vein 2.

♀. Hind wing more uniformly suffused with fuscous.

Hab. Palestine, 1 ♂, 1 ♀. *Exp.* 36 millim.

4258. Hadjina poliastis. (Plate CXXXVI. fig. 19.)

Amyna poliastis, Hmpsn. J. Bomb. Nat. Hist. Soc. xvii. p. 470 (1906).

♂. Head pure white; thorax greyish mixed with brown, the pectus and legs white slightly irrorated with brown; abdomen white faintly tinged with ochreous, the crest at base brown. Fore wing grey slightly suffused and irrorated with reddish brown, especially on costal half to postmedial line; subbasal line represented by a slight striga from costa; antemedial line indistinct, oblique, waved, angled inwards on vein 1; claviform absent; orbicular and reniform with faint pale annuli slightly defined by brown, constricted at middle; postmedial line indistinct, dark, defined by greyish on outer side and with dark points beyond it on the veins, bent outwards below costa and oblique below vein 4, some grey points beyond it on costa; subterminal line grey slightly defined by brown on inner side, angled outwards at vein 7, then straight, oblique; a fine terminal brown line. Hind wing white tinged with ochreous brown, especially on terminal area; cilia pure white; the underside white slightly irrorated with brown on costal and terminal areas.

Hab. Punjab, Ferozpur (*Nurse*), 1 ♂ type. *Exp.* 24 millim.

*4259. **Hadjina ferruginea.** (Plate CXXXVI. fig. 20.)

Caradrina ferruginea, South, ined.

♀. Head and thorax ochreous mixed with fiery red and fuscous; palpi fuscous at sides; tarsi fuscous ringed with white; abdomen whitish irrorated with fuscous and with faint fuscous dorsal bands. Fore wing ochreous suffused in parts with fiery red and irrorated with brown; subbasal line blackish, waved, from costa to submedian fold; antemedial line waved, rather oblique; orbicular and reniform slightly defined by fuscous, the former round; medial line diffused from costa to between the stigmata, slight and oblique from lower angle of cell to inner margin; postmedial line black, bent outwards below costa, then minutely waved, excurved to vein 4, then incurved; subterminal line very indistinct, excurved below vein 7 and at middle; a terminal series of small black lunules; cilia with diffused blackish lines at middle and tips. Hind wing ochreous yellow tinged and irrorated with brown; traces of a discoidal spot and curved postmedial line; a terminal series of black points; the underside with black discoidal spot, the diffused postmedial line more distinct.

Hab. Japan, Tsu-shima, type † in Coll. Wileman. *Exp.* 30 millim.

4260. **Hadjina pyroxantha.** (Plate CXXXVI. fig. 21.)

Polia pyroxantha, Hmpsn. J. Bomb. Nat. Hist. Soc. xiv. p. 202 (1902).

♂. Head and tegulæ yellowish white tinged with fiery red and slightly mixed with brown; sides of palpi and frons dark brown; thorax fiery red slightly mixed with brown; pectus and legs whitish mixed with brown; abdomen ochreous white irrorated with dark brown, the anal tuft pale rufous. Fore wing orange-yellow suffused and thickly irrorated with fiery red, the veins streaked with dark brown, the costal area suffused with dark brown, a dark brown streak on inner margin except towards base; subbasal line represented by slight red striæ from costa and cell; antemedial line brown, waved, oblique from costa to submedian fold; claviform represented by a black point on antemedial line; orbicular yellow defined by red, small, round; reniform a narrow white lunule defined by black, very oblique, its lower part intersected by the dark streak on vein 4; an oblique red medial line from lower angle of cell to inner margin; postmedial line dark brown defined by yellow on outer side, bent outwards below costa, then minutely dentate, strongly excurved to vein 4, then strongly incurved; subterminal line brown, slightly angled outwards at veins 7, 6, 4, 3; a fine brown terminal line; cilia red with a faint dark line through them, brown at tips towards tornus. Hind wing white tinged with yellow, the terminal area slightly irrorated with brown; a slight brown terminal line; cilia yellow; the underside pale yellowish,

the costal and terminal areas slightly irrorated with brown, a small discoidal spot and diffused curved postmedial line.

Hab. Sikhim Tibet, Yatung (*Hobson*), 3 ♂ type. *Exp.* 26–30 millim.

4261. Hadjina grisea.

Limacodes grisea, Hmpsn. Ill. Het. B. M. viii. p. 63, pl. 142. f. 7 (1891); id. Moths Ind. ii. p. 320.

♀. Head and thorax grey mixed with brown; tarsi brown slightly ringed with white; abdomen grey suffused with brown. Fore wing grey thickly irrorated with reddish brown; subbasal line represented by slight dark striæ from costa and cell; antemedial line indistinct, brown faintly defined by whitish on inner side, slightly sinuous, oblique from costa to submedian fold; claviform represented by a rufous patch beyond its extremity; orbicular and reniform hardly traceable, with faint pale annuli, some rufous in cell between them; medial shade strong, blackish-brown, rather diffused, oblique from costa to reniform, then inwardly oblique; postmedial line very indistinct, double filled in with whitish, bent outwards below costa, incurved below vein 4 and closely approximated to the medial shade; subterminal line diffused, whitish defined on inner side by red-brown suffusion, oblique, angled outwards at vein 7 and very slightly excurved at middle; a terminal series of slight brown striæ. Hind wing whitish suffused and irrorated with brown; cilia whiter; the underside whitish irrorated with fuscous, a blackish discoidal spot, diffused curved postmedial line, and terminal series of striæ.

Hab. Assam, Nágas; Madras, Nilgiris (*Hampson*), 1 ♀ type. *Exp.* 32 millim.

4262. Hadjina pallida. (Plate CXXXVI. fig. 22.)

Telesilla pallida, Leech, Trans. Ent. Soc. 1900, p. 589.

♂. Head and thorax grey-white mostly suffused with rufous; pectus and legs tinged with dark brown, the tarsi dark brown with slight pale rings; abdomen grey-white slightly tinged with brown. Fore wing glossy violaceous grey-white, the antemedial area from costa to submedian fold, the area before the medial line and the postmedial area suffused with red-brown; subbasal line represented by a slight oblique striga from costa defined by whitish on outer side and a patch of blackish scales below the cell; antemedial line indistinct, double filled in with whitish, angled outwards below costa, bent inwards in cell, then excurved; orbicular very large, white defined at sides by black, very oblique and produced at lower extremity; reniform white with pale greyish centre, defined by black on inner side and with some minute black points on outer, oblique bar-shaped; medial line strong, blackish brown, very oblique from costa to reniform at discal fold, then inwardly oblique; postmedial line indistinct, defined by white on outer side, bent out-

wards below costa and oblique below vein 4; subterminal line only defined by the contrast between the postmedial and terminal areas, angled outwards at vein 7 and very slightly excurved at middle; the termen greyish with a series of slight dark striæ defined on inner side by faint whitish lunules; cilia greyish at base, white at tips. Hind wing white faintly tinged with brown, the termen whiter with a fine dark terminal line; the underside with the costal area suffused with rufous, an oblique dark bar from middle of costa, blackish discoidal spot, diffused postmedial line from costa to vein 4, diffused fuscous subterminal band, and terminal series of small lunules.

Hab. W. China, Pu-tsu-fang, 6 ♂ type. *Exp.* 34–38 millim.

Genus **PROCRATERIA.**

Type.

Procrateria, Hmpsn. Ann. S. Afr. Mus. iii. p. 426 (1905) ..... *noloides.*

Proboscis fully developed; palpi obliquely upturned, short, the 2nd joint moderately scaled, the 3rd joint moderate; frons with large truncate conical prominence with raised edges and corneous plate below it; eyes large, round; antennæ of male serrate, of female ciliated; thorax clothed chiefly with scales, the pro- and metathorax with small spreading crests; tibiæ moderately fringed with hair; abdomen with dorsal crest at base only. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from well below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing without black patches on basal and apical costal areas..... .... *pterota.*
B. Fore wing with black patches on basal and apical costal areas..... *noloides.*

4263. **Procrateria pterota**, n. sp. (Plate CXXXVI. fig. 23.)

Head and thorax ochreous white mixed with rufous; palpi and antennæ fuscous; legs suffused with fuscous brown; abdomen ochreous, the basal crest black. Fore wing ochreous white tinged with pale rufous in parts, the veins with brown streaks, the costal area suffused with pale pink; subbasal line represented by a slight oblique brown striga from costa; antemedial line represented by an oblique brown line from costa to subcostal nervure and a red-brown line from submedian fold to inner margin angled inwards on vein 1 and with some rufous suffusion beyond it; slight rufous streaks in upper and lower extremities of cell; two black discoidal points; postmedial line represented by a very oblique brown line from costa to vein 7 and an oblique rufous striga from inner margin just beyond the antemedial line; rufous streaks beyond the cell above veins 4, 3 and above vein 7 from the postmedial line to subterminal line, which is very close to termen, whitish, minutely waved, defined on inner side by a series of wedge-shaped rufous marks; the terminal area red-brown with a slight whitish line just before termen; cilia

pinkish white with a black line through them. Hind wing pale ochreous, slightly tinged with brown in female and with indistinct diffused subterminal band; the underside with the costal area slightly irrorated with brown.

Hab. Natal, Charleston (*Toppin*), 1 ♂, 1 ♀ type. *Exp.* 36 millim.

4264. Procrateria noloides.

Procrateria noloides, Hmpsn. Ann. S. Afr. Mus. iii. p. 426 (1905).

Head and tegulæ dark brown slightly mixed with grey; thorax grey slightly irrorated with brown; pectus and legs dark brown, the tarsi with slight pale rings; abdomen grey irrorated with black-brown. Fore wing grey-white irrorated with black-brown, the veins streaked with black; a black patch on basal costal area extending to antemedial line and at extremity to median nervure, and another black patch on costal area from post-medial line to apex, its outer edge obliquely excised; antemedial line very indistinct, whitish slightly defined by black scales, forming the outer edge of the black patch, then slightly angled outwards on median nervure and oblique to inner margin; orbicular

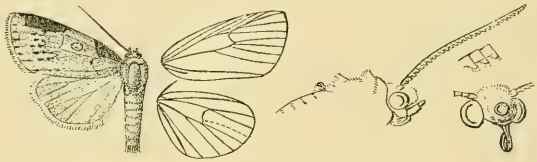


Fig. 145.—*Procrateria noloides*, ♂. ¾.

whitish slightly defined by black, round; reniform represented by a slight whitish bar defined by blackish on inner side; traces of a dark sinuous medial line; postmedial line indistinct, dark, defined by whitish on outer side before the costal black patch, bent outward below costa, then strongly dentate and produced to a double series of black points on the veins, oblique below vein 4; subterminal line hardly traceable, whitish, defined on inner side by very faint minute rufous streaks in the interspaces, slightly excurved below vein 7 and at middle; cilia grey mixed with rufous. Hind wing greyish uniformly suffused with fuscous brown; cilia white at tips; the underside grey thickly irrorated with fuscous, a black point at upper angle of cell with dark mark on costa above it, and an indistinct diffused curved postmedial line.

Hab. Mashonaland (*Dobbie*), 1 ♀ type. *Exp.* 34 millim.

Genus XYLOMŒA.

	Type.
Xylomoia, Staud. Rom. Mém. vi. p. 451 (1892)	*graminea.*

Proboscis fully developed; palpi obliquely upturned, short, roughly scaled; frons with slight roughened prominence; eyes large, rounded; antennæ of

male ciliated; thorax typically clothed with hair and hair-like scales, the pro- and metathorax with spreading crests; tibiæ moderately fringed with hair; abdomen with dorsal crest at base only. Fore wing rather narrow, the termen crenulate, oblique towards tornus; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 shortly stalked or from angle; 8 anastomosing with the cell near base only.

Sect. I. Thorax clothed chiefly with scales.

A. Fore wing dark cupreous brown ..... *lætrina.*
B. Fore wing pale grey-brown ..... *didonea.*

4265. Xylomœa lætrina.

Apamea lætrina, Druce, Biol. Centr.-Am., Het. ii. p. 477, pl. 93. f. 21 (1898).

Head and thorax brown mixed with greyish; pro- and metathorax with paired black spots; patagia with black spots at middle and tips; pectus grey; tarsi blackish ringed with white; abdomen grey dorsally suffused with brown. Fore wing brown with a cupreous gloss; subbasal line black, oblique, from costa to vein 1, above which it is produced into a slight streak; antemedial

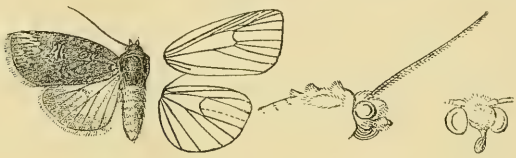


Fig. 146.—*Xylomœa lætrina*, ♂. ½.

line indistinct, slightly defined by greyish on inner side, angled outwards below costa, then oblique, waved and angled inwards to whitish points on the veins; claviform narrow, pale brown slightly defined by black; orbicular pale red-brown with faint whitish annulus defined by blackish, very oblique elliptical; reniform defined by blackish and with pale red-brown centre defined by blackish, some whitish points on its annulus at upper and lower edges; postmedial line very indistinct, double, with some whitish on it at costa, strongly bent outwards below costa, then strongly dentate and produced to whitish points on the veins, very oblique below vein 4; a diffused oblique whitish fascia from costa just before apex to below vein 7 with black streaks from it to termen above and below vein 7; a faint dentate whitish subterminal line; a terminal series of small black lunules defined on inner side by slight whitish lunules; cilia with fine pale line at base. Hind wing cupreous brown with a slight dark discoidal spot; cilia white tinged with brown at tips; the underside white irrorated with brown, a black discoidal lunule, faint crenulate postmedial line

with minute dark streaks on the veins, traces of subterminal shade and terminal series of small black lunules.

Hab. Mexico, Guerrero, Omilteme (*H. H. Smith*), 2 ♀, 1 ♀ type, Godman-Salvin Coll. *Exp.* 34–40 millim.

4266. Xylomœa didonea. (Plate CXXXVI. fig. 24).

Hadena didonea, Smith, Trans. Am. Ent. Soc. xx. p. 58, pl. 6. f. 7 (1894); Dyar, Cat. Lep. N. Am. p. 114.

Head and thorax whitish tinged with rufous and mixed with black; abdomen ochreous white irrorated with brown. Fore wing grey-brown tinged with pale rufous in submedian interspace to postmedial line and thence to termen between veins 4, 3; subbasal line represented by a slight striga from costa; antemedial line black defined by white on inner side, oblique and sinuous from costa to submedian fold, then angled outwards above inner margin; claviform replaced by a slight dark streak in submedian fold from ante- to postmedial lines; orbicular and reniform with slight white annuli defined by some brown scales, the former narrow, oblique irregular; the veins beyond the cell with fine white streaks; postmedial line dark defined by white on outer side, strongly bent outwards below costa, excurved to vein 4, then oblique; subterminal line white, dentate from costa to vein 6, excurved to termen at veins 4, 3, angled inwards in submedian fold to near postmedial line, then bent outwards to tornus; a fine waved black terminal line. Hind wing white irrorated with brown; a fine dark terminal line; cilia white with a slight brown line through them; the underside with slight discoidal lunule and faint curved postmedial line.

Hab. U.S.A., Colorado, Glenwood Springs, 1 ♀, California (*Walsingham*), 1 ♂. *Exp.* 30–40 millim.

Sect. II. Thorax clothed with hair and hair-like scales.

4267. Xylomœa graminea.

Nonagria graminea, Græs. Berl. ent. Zeit. xxxii. p. 343 (1888); Staud. Cat. Lep. pal. p. 188.

Xylomoia separata, Staud. Rom. Mém. vi. p. 451, pl. 12. f. 8 (1892); id. Cat. Lep. pal. p. 183.

♂. Head and thorax ochreous suffused with red-brown; abdomen ochreous white tinged with brown. Fore wing pale ochreous, the inner half and terminal half below vein 6 suffused with red-brown, the veins of terminal half with dark streaks defined on each side by fine pale streaks; a slight dark streak below base of cell; a faint double antemedial line filled in with whitish from submedian fold to inner margin, angled inwards on vein 1; orbicular represented by a slight brown point in upper part of cell, the reniform by two brown points; postmedial line slight, double filled in with white, from vein 5 to inner margin, oblique below vein 3; a terminal

series of small black lunules; cilia brown intersected with whitish. Hind wing white faintly tinged with brown; traces of a discoidal lunule and curved postmedial line; the underside with the costal

Fig. 147.—*Xylomœa graminea*, ♂. ½.

and terminal areas slightly irrorated with brown, a discoidal point and postmedial series of minute points on the veins.

Hab. E. Siberia, Ussuri, Raddefka, 1 ♂. *Exp.* 30 millim.

Genus **RUACODES**, nov.

Type, *R. tela*.

Proboscis fully developed; palpi obliquely upturned, the 2nd joint fringed with scales in front and reaching to about middle of frons, the 3rd short, blunt; frons with truncate conical prominence with raised edges, flattened vertical central process and corneous plate below it; eyes large, rounded; antennæ of female almost simple; head and thorax clothed chiefly with scales, the pro- and metathorax with spreading crests; tibiæ moderately fringed with hair; abdomen with dorsal crest at base only. Fore wing with the apex rounded, the termen evenly curved and moderately crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base only.

4268. **Ruacodes tela.**

Hadena tela, Smith, Proc. U.S. Nat. Mus. xxii. p. 470 (1900); Dyar, Cat. Lep. N. Am. p. 115.

♀. Head and thorax dark brown mixed with grey and some black and tinged with olive; patagia with strong black streak near

Fig. 148.—*Ruacodes tela*, ♀. ½.

upper edge; tarsi fuscous ringed with whitish; abdomen grey-brown tinged with olive at base, the basal crest darker. Fore wing grey thickly irrorated with fuscous and tinged with olive especially on inner and terminal areas; subbasal line represented by two

black striæ from costa; a black streak above inner margin before the antemedial line, which is double, angled outwards below costa and in cell and strongly above inner margin, excurved in submedian interspace; claviform defined by black, short, with black streak from its extremity to postmedial line; orbicular and reniform with slight pale annuli defined by black, the former round, the latter rather constricted at middle; an indistinct medial line oblique from costa to vein 2, then incurved; postmedial line defined by greyish on outer side, strongly bent outwards below costa, then minutely dentate, angled inwards at discal fold, very oblique below vein 5, incurved and stronger in submedian interspace, some pale points beyond it on costa; the veins of terminal area with slight dark streaks; subterminal line white, dentate, defined on inner side by wedge-shaped black marks and by a streak above vein 4 extending to reniform; a terminal series of small black lunules; cilia fuscous and grey intersected with whitish. Hind wing whitish, the marginal areas suffused and irrorated with fuscous; a discoidal spot and indistinct sinuous postmedial line; some white on termen towards tornus; a fine black terminal line; cilia white with a fuscous line through them; the underside white with the costal and terminal areas to vein 2 irrorated with fuscous, a discoidal spot and indistinct curved postmedial line.

Hab. U.S.A., Arizona (*Poling*), 1 ♀. *Exp.* 34 millim.

Genus **AMIANA**.

Type.

Amiana, Dyar, Proc. Ent. Soc. Wash. vi. p. 104 (1904) ..... *niama*.

Proboscis fully developed; palpi upturned, short, the 2nd joint fringed with hair in front, the 3rd moderate; frons with rounded prominence with corneous plate below it; eyes large, rounded; antennæ of male laminate, almost simple; head and thorax clothed chiefly with scales, the pro- and metathorax with spreading crests; tibiæ moderately fringed with hair; abdomen with dorsal crest at base only. Fore wing with the apex rounded, the termen evenly curved and slightly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle or shortly stalked; 8 anastomosing with the cell near base only.

A. Fore wing with the postmedial area white except towards costa ..... *lætabilis*.
B. Fore wing with the postmedial area not white.
a. Fore wing tinged with rufous ..... *continens*.
b. Fore wing black-brown mixed with grey ..... *niama*.

4269. Amiana lætabilis.

Hadena lætabilis, Smith, Can. Ent. xxxi. p. 263 (1899); Dyar, Cat. Lep. N. Am. p. 115.

♂. Head and thorax fuscous brown mixed with grey; patagia with some black scales near upper edge; tarsi blackish ringed with

white; abdomen whitish tinged with ochreous brown, the basal crest brown and white. Fore wing with the basal and postmedial areas pale sapphire blue (fading to white), the medial area black suffused with grey; subbasal line slight, black, waved, from costa to submedian fold; a diffused dentate dark mark above inner margin near base; antemedial line oblique, waved, angled inwards on vein 1 and excurved above inner margin, a small white spot beyond it on costa; claviform small, defined by black; orbicular small with fuscous centre and white annulus defined by black, round; reniform white defined by black, its centre defined by black; an indistinct waved medial line; postmedial line with small white spot at costa, strongly bent outwards below costa, then

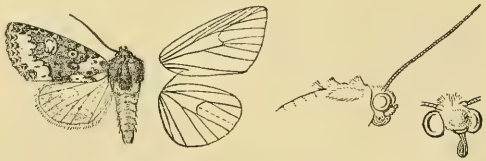


Fig. 149.—*Amiana lætabilis*, ♂. ½.

dentate and with series of black points beyond it on the veins, slightly incurved at discal fold and strongly below vein 4; the postmedial area with dark patch on costa with white points on it; subterminal line only defined by black on outer side, dentate; the narrow terminal area black and white mixed, with a series of slight black lunules on termen; cilia fuscous intersected with whitish. Hind wing white, the terminal area suffused with fuscous, a slight discoidal lunule and sinuous postmedial line; a fine dark terminal line; cilia white with diffused fuscous line through them.

Hab. U.S.A., New Mexico, Santa Fé (*Cockerell*), 2 ♂. *Exp.* 34 millim.

4270. **Amiana continens.** (Plate CXXXVI. fig. 25.)

Perigea continens, H. Edw. Papilio, iv. p. 122 (1884); Smith, Cat. Noct. N. Am. p. 154.

♂. Head and thorax rufous slightly mixed with ochreous; pectus white; tarsi black ringed with white; abdomen white with dorsal brown bands, the anal tuft pale rufous. Fore wing with the basal area pale yellow suffused with rufous, the medial area suffused with black, the terminal area rufous; subbasal line represented by small black spots below costa and cell; antemedial line almost medial, strong, black, slightly waved, angled inwards on vein 1; claviform and orbicular absent; reniform small, white with central black lunule; postmedial line black defined by white on outer side, bent outwards below costa, then very minutely waved, excurved to vein 4, then incurved, some white points

beyond it on costa; faint traces of a subterminal line, defined on inner side at costa by a brownish shade, bent outwards between veins 7 and 6 and somewhat excurved at middle; a terminal series of slight dark striæ; cilia reddish at base, whitish at tips. Hind wing pure white, the termen narrowly tinged with pale red-brown; cilia white; the underside with indistinct punctiform postmedial line from costa to vein 6.

♀. Head and thorax dark rufous; fore wing dark rufous, the medial area suffused with black; hind wing wholly suffused with brown, the basal area paler.

Hab. U.S.A., Arizona, Huachuca Mts., 1 ♂, 1 ♀. *Exp.* 32 millim.

*4271. **Amiana niama.** (Plate CXXXVI. fig. 26.)

Amiana niama, Dyar, Proc. Ent. Soc. Wash. vi. p. 105 (1904).

Head, thorax, and abdomen black-brown mixed with greyish. Fore wing black-brown mixed with greyish, the basal area with some reddish ochreous scales and a diffused patch of the same colour at tornus; subbasal line black, waved, from costa to submedian fold; antemedial line black, waved; claviform represented by an ochreous point; orbicular and reniform small, with pale annuli defined by black, the former round, the latter strongly constricted at middle; a blackish medial shade; postmedial line black defined by whitish on outer side, bent outwards below costa, excurved to vein 4, then sinuous, some white points beyond it on costa; subterminal line whitish defined on inner side by blackish, excurved below vein 7 and at middle; a terminal series of black striæ; cilia with slight pale line at base. Hind wing black-brown with a pale line at base of cilia; the underside with three faint dark lines.

Hab. U.S.A., Arizona, Huachuca Mts., Nogales. *Exp.* 28 millim. This species is unknown to me, figured from a drawing from type in U.S. Nat. Mus.

Genus **CATAMECIA.**

Type.

Catamecia, Staud. Iris, x. p. 288 (1897) ..... *jordana.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching to about middle of frons and moderately scaled, the 3rd short; frons with truncate conical prominence with slight raised edges and corneous plate below it; eyes large, rounded; antennæ of male typically ciliated; thorax clothed chiefly with scales, the pro- and metathorax with spreading crests; tibiæ slightly fringed with hair; abdomen with dorsal crest at base only. Fore wing with the apex rectangular, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male serrate.

4272. Catamecia furtiva.

Axylia furtiva, Swinh. P. Z. S. 1885, p. 448; Hmpsn. Moths Ind. ii. p. 263.

Head and thorax greyish ochreous mixed with dark reddish brown; palpi blackish; some blackish between antennæ; tarsi fuscous ringed with ochreous; abdomen ochreous slightly irrorated with black, the crest at base black. Fore wing pale yellowish suffused with cupreous brown except in submedian interspace and on postmedial area, the terminal area whitish except at apex, the veins with slight dark streaks, more prominent on terminal area; subbasal line represented by slight double dark striæ from costa, the antemedial line by slight double dark striæ from costa and inner margin; claviform absent; orbicular indistinct, whitish, undefined, with slight black streaks before and beyond it in discal

Fig. 150.—*Catamecia furtiva*, ♂. ¾.

fold; reniform whitish, its centre defined by some black points and with slight dentate black mark before it in discal fold and blackish spot beyond its lower extremity; postmedial line represented by a double series of slight dark points on the veins, bent outwards below costa and oblique below vein 4; an oblique dark shade from apex; subterminal line represented by a brown shade on its inner side, angled inwards in submedian fold; a terminal series of black points; cilia dark brown intersected with white. Hind wing yellowish white tinged with brown; cilia whitish.

Hab. Bombay, Poona (*Swinhoe*), 1 ♂, 1 ♀ type. *Exp.* 24 millim.

Sect. II. Antennæ of male ciliated.

A. Fore wing with black streak below base of cell.
  a. Fore wing with black streak in submedian fold between ante- and postmedial lines ..... *connectens.*
  b. Fore wing without black streak in submedian fold between ante- and postmedial lines ..... *deceptrix.*
B. Fore wing without black streak below base of cell.
  a. Fore wing with the claviform filled in with black-brown... *minima.*
  b. Fore wing with the claviform not filled in with black-brown.
    a^1. Fore wing with the reniform angled inwards on median nervure ..... *jordana.*
    b^1. Fore wing with the reniform not angled inwards on median nervure..... *contrita.*

4273. Catamecia connectens. (Plate CXXXVI. fig. 27.)

Tarache connectens, Hmpsn. Ann. S. Afr. Mus. ii. p. 392 (1902).

♀. Head and thorax grey tinged with red-brown, the scales pencilled with black-brown; palpi white in front; frons white with a black bar; pectus and legs whitish, the fore tibiæ and the tarsi brown ringed with white; abdomen red-brown, the ventral surface whitish. Fore wing with the scales rufous and red-brown edged with white; a black streak below base of cell; antemedial line represented by an oblique black striga from costa and slight streaks on the veins, angled outwards in submedian fold where there is a strong black streak from it to postmedial line; orbicular and reniform small and close together, rufous with a black streak between them, the former rather elongate and defined by black, the latter defined by black on inner side only; postmedial line black defined by white on outer side, very indistinct except between veins 3 and 1, oblique from costa to vein 6, then inwardly oblique to submedian fold and angled outwards at vein 1; the terminal area with slight dark streaks on the veins and a dark shade at middle. Hind wing whitish, the marginal areas suffused with brown; cilia white with a brown line near base from apex to vein 2; the underside with the costal area tinged with ochreous and irrorated with red-brown.

Hab. Bechuanaland, N'Gami (*Lugard*), 1 ♀ type. *Exp.* 26 millim.

4274. Catamecia deceptrix. (Plate CXXXVI. fig. 28.)

Pseudohadena deceptrix, Staud. Iris, xii. p. 369, pl. 5. f. 15 (1900); id. Cat. Lep. pal. p. 170.

♂. Head and thorax brownish grey mixed with dark brown; antennæ ringed with black; abdomen brownish grey irrorated with fuscous. Fore wing pale grey-brown irrorated with fuscous; the veins with slight black streaks; a sinuous black streak below base of cell; subbasal line represented by two oblique striæ from costa; antemedial line double, more prominent at costa, obliquely excurved from cell to inner margin; orbicular and reniform rather small, defined by black, the former rather elongate elliptical, the latter open above; postmedial line indistinctly double, more prominent at costa, bent outwards below costa, then dentate and produced to slight streaks on the veins, excurved to vein 4, then oblique, some pale points beyond it on costa; subterminal line hardly traceable, with slight fuscous suffusion before it on inner side, and diffused rather wedge-shaped marks beyond it in the interspaces; a prominent waved black terminal line. Hind wing ochreous white; a fine slightly waved fuscous terminal line; the underside with the costal area irrorated with fuscous, a small discoidal spot.

Hab. Syria, 1 ♂. *Exp.* 40 millim.

4275. Catamecia minima. (Plate CXXXVI. fig. 29.)

Apamea minima, Swinh. P. Z. S. 1889, p. 410; Hmpsn, Moths Ind. ii. p. 248.
Catamecia bacheri, Staud. Cat. Lep. pal. p. 213 (1901).

♂. Head and thorax ochreous slightly tinged with rufous and irrorated with brown; abdomen ochreous white. Fore wing ochreous irrorated with brown; subbasal line represented by slight black marks below costa and cell; antemedial line blackish defined by ochreous on inner side, slightly excurved below costa, then somewhat sinuous; claviform moderate, filled in with black-brown; orbicular and reniform small, ochreous slightly defined by blackish, the former round, the latter narrow and angled inwards on median nervure, a diffused dark shade between and beyond them; postmedial line defined by ochreous on outer side, strongly bent outwards below costa and oblique below vein 4, some ochreous points beyond it on costa; subterminal line ochreous defined on inner side by small dentate blackish marks below costa and at middle, somewhat excurved below costa and at middle and angled inwards at vein 2; a terminal series of slight black striæ; cilia brown intersected with ochreous. Hind wing white with fine dark terminal line; the underside with the costal area irrorated with pale brown, a brown discoidal lunule and traces of a diffused postmedial line from costa to vein 2.

Hab. Palestine, Jordan, 1 ♂; Aden (*Yerbury*), 1 ♂; Persian Gulf, Fao (*Cuming*), 1 ♂; Punjab, Lahore (*Harford*), 2 ♂; Sind, Karachi (*Swinhoe*), 1 ♂, Hyderabad (*Swinhoe*), 1 ♂, Kipra (*Swinhoe*), 1 ♂ type. *Exp.* 20–22 millim.

4276. Catamecia jordana.

Catamecia jordana, Staud. Iris, x. p. 288, pl. 4. f. 23 (1897); id. Cat. Lep. pal. p. 213.
Catamecia mauretanica, Staud. Cat. Lep. pal. p. 213 (1901).

♂. Head and thorax ochreous white mixed with brown; tarsi fuscous ringed with white; abdomen white slightly irrorated with

Fig. 151.—*Catamecia jordani*, ♂. ½.

brown. Fore wing ochreous white thickly irrorated with brown, the areas before medial part of subterminal line and towards tornus whiter; no trace of subbasal, antemedial, or postmedial lines; a whitish fascia below base of cell confluent with the claviform, which

is white defined by black, narrow and elongate; orbicular very small, elongate elliptical, white defined by blackish and with slight dark streak in centre; reniform narrow, angled inwards on median nervure, white defined by blackish and with brown line in centre dilated below; subterminal line whitish defined on inner side by an oblique fuscous shade from costa, bent outwards at vein 7, then represented by an oblique series of white striæ slightly defined on each side by brown suffusion, ending at vein 2; a terminal series of dark striæ. Hind wing white tinged and irrorated with brown except towards base; cilia white; the underside white slightly irrorated with brown especially on terminal area, a slight discoidal lunule.

Ab. 1. *mauretanica*. Fore wing uniformly irrorated with fuscous, the white streak below base of cell absent and the claviform hardly traceable; the ante- and postmedial lines sometimes present, obsolete towards costa, the former defined by white on inner side and angled inwards on vein 1, the latter defined by white on outer side, oblique and slightly sinuous.—Algeria.

Hab. Algeria, Biskra, Tkout (*Walsingham*), 1 ♂, Hammam-es-Salahin (*Walsingham*), 6 ♂; Palestine, 1 ♂. *Exp.* 24–28 millim.

4277. Catamecia contrita.

Agrotis contrita, Christ. Rom. Mém. i. p. 118 (1884); Staud. Cat. Lep. pal. p. 222.
Agrotis contrix, Christ. Rom. Mém. i. pl. vii. f. 8 (1884).

♂. Head, thorax, and abdomen pale ochreous slightly tinged with brown. Fore wing pale ochreous irrorated with brown; subbasal line represented by slight dark marks below costa and cell; antemedial line indistinct, waved, somewhat oblique; claviform slightly defined by fuscous; orbicular and reniform rather indistinctly defined by fuscous, the former very small, round, the latter rather large and quadrate; traces of an oblique medial line from lower angle of cell to inner margin; postmedial line strongly bent outwards below costa, then dentate, very oblique below vein 4, some slight pale points beyond it on costa; faint traces of a pale subterminal waved line excurved below vein 7 and at middle; a terminal series of slight brown lunules; cilia mixed with brown and with traces of a slight brown line through them. Hind wing pale brownish ochreous, the terminal area rather darker; cilia white; the underside white irrorated with pale brown, an indistinct curved postmedial line.

Hab. W. Turkestan, Turcomania, 1 ♂; E. Turkestan, Ili. *Exp.* 30 millim.

Genus **NAMANGANA**.

	Type.
Namangana, Staud. Stett. ent. Zeit. 1888, p. 28	*cretacea*.
Eupolia, Smith, Tr. Am. Ent. Soc. xxi. p. 69 (1894)	*licentiosa*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching to about middle of frons and moderately scaled in front, the 3rd typically short,

porrect; frons smooth; eyes large, rounded; antennæ of male typically ciliated; head and thorax clothed chiefly with scales, the pro- and metathorax with spreading crests; tibiæ moderately fringed with hair; abdomen with dorsal crest at base only. Fore wing with the apex rounded, the termen evenly curved and slightly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. (*Eupolia*). Antennæ of male bipectinate with long branches.

A. Fore wing red-brown ..... *pectinicornis.*
B. Fore wing grey ..... *licentiosa.*

4278. Namangana pectinicornis. (Plate CXXXVI. fig. 30.)

Xanthoptera pectinicornis, Hmpsn. Trans. Ent. Soc. 1895, p. 302; id. Moths Ind. iv. p. 515.

♂. Head and thorax reddish brown mixed with grey; pectus and legs grey tinged with brown, the tarsi blackish ringed with white; abdomen whitish, the basal crest fuscous, the anal tuft tinged with ochreous. Fore wing reddish brown suffused with fuscous and irrorated with black; subbasal line represented by a slight dark striga from costa; antemedial line very indistinct, oblique from costa to submedian fold; orbicular and reniform very small, faintly defined by blackish, the former whitish, oblique elliptical, the latter with brown centre and whitish annulus; a slight dark medial shade, oblique from costa to lower angle of cell; postmedial line hardly traceable, bent outwards below costa, excurved to vein 4, then oblique, some whitish points beyond it on costa; subterminal line indistinct, pale, slightly angled outwards at vein 7, then oblique; a terminal series of minute black lunules; cilia with fine pale line at base followed by a strong black line. Hind wing white, the costal area tinged with brown; a slight brown terminal line and the cilia tinged with ochreous from apex to vein 2; the underside with the costal area irrorated with brown.

Ab. 1. Fore wing with the medial area whitish tinged with rufous.

Hab. Bengal, Calcutta, 1 ♂; Madras, Belgaum (*Watson*), 1 ♂; Ceylon, Hambantota (*Mackwood*), 1 ♂ type, Pattalam (*Pole*), 1 ♂, 1 ♀. *Exp.* 20 millim.

*4279. Namangana licentiosa.

Eupolia licenticsa, Smith, Trans. Am. Ent. Soc. xxi. p. 70, pl. 3. f. 8 (1894); Dyar, Cat. Lep. N. Am. p. 161.

Head and thorax ashen grey with dark irroration; the tips of tegulæ and disk of patagia with a yellowish tinge; abdomen grey. Fore wing ashen grey irrorated with fuscous, the markings indistinct and interrupted; subbasal and antemedial lines hardly

traceable, very indistinctly double; claviform small, defined by blackish, indistinctly above; orbicular and reniform large, irrorated with white and undefined, the former round; postmedial line bent outwards below costa, then somewhat dentate and produced to slight streaks on the veins, excurved to vein 4, then incurved; postmedial area somewhat paler and with pale points on costa; subterminal line pale, defined on each side by blackish, excurved below vein 7

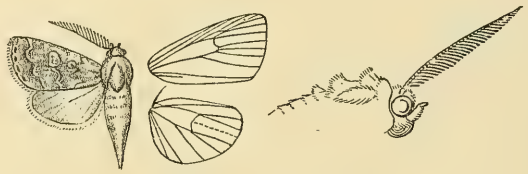


Fig. 152.—*Namangana licentiosa*, ♂. ½.

and at middle; a terminal series of black striæ; cilia with fine pale lines at base and middle. Hind wing whitish, the termen irrorated with fuscous in male, with broad diffused band in female; a small discoidal spot; the underside white irrorated with brown, a small discoidal spot and traces of a postmedial line more distinct in female.

Hab. U.S.A., Utah. *Exp.* 27–29 millim. This species is unknown to me; figured from a drawing from specimen in U.S. Nat. Mus.

Sect. II. Antennæ of male bipectinate with short branches, the apex ciliated.

4280. **Namangana alfceni.**

Perigea perplexa, Smith, Cat. Noct. N. Am. p. 154 (1893), non descr.
Perigea alfkenii, Grote, Abh. Nat. Ver. Bremen, xiv. p. 79 (1895); Dyar, Cat. Lep. N. Am. p. 111.
Perigea paupera, Druce, Biol. Centr.-Am., Het. i. p. 279 (nec Wlk.).

Head, thorax, and abdomen ochreous mixed with some black scales; palpi black above; frons with lateral black bars; tarsi fuscous with pale rings. Fore wing ochreous irrorated with black;

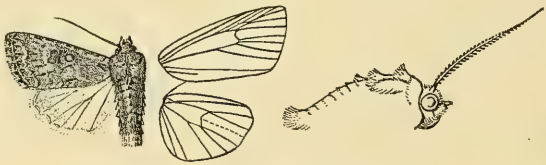


Fig. 153.—*Namangana alfceni*, ♂. ½.

subbasal line black, ill-defined, double, waved, from costa to submedian fold; antemedial line double, waved, nearly erect; orbicular

and reniform defined by black, the former round; an indistinct waved black medial line; postmedial line double at costa, slightly bent outwards below costa, then waved and with series of black points beyond it on the veins, excurved to vein 4, then incurved, some pale points beyond it on costa; subterminal line ochreous defined by fuscous on inner side, excurved below vein 7 and at middle; a terminal series of slight black lunules; cilia with a fine ochreous line at base. Hind wing white, the veins and terminal area tinged with brown; cilia white; the underside white, the costal and terminal areas irrorated with brown, a slight discoidal lunule and postmedial series of dark points on the veins.

Hab. U.S.A., California, Arizona, 1 ♀, Marisco Co., Phœnix (*Kunzé*), 1 ♂, Prescott (*Kunzé*), 1 ♀; N. Mexico, Sonora (*Morrison*), 4 ♂, 1 ♀, Godman-Salvin Coll. *Exp.* 32–34 millim.

Sect. III. Antennæ of male serrate.

A. Fore wing with whitish fascia through the cell and thence to apex ..... *minor.*
B. Fore wing without whitish subcostal fascia ..... *præacuta.*

4281. **Namangana minor.** (Plate CXXXVI. fig. 31.)

Crambodes minor, Butl. Trans. Ent. Soc. 1886, p. 397.

Head and thorax whitish mixed with rufous; abdomen whitish tinged with rufous. Fore wing whitish suffused with rufous; a whitish streak on basal half of inner margin; subbasal and antemedial lines absent; orbicular an elongate elliptical white mark with rufous streak through middle; reniform a small white spot with some rufous in lower part, an oblique fascia formed of white streaks in the interspaces from it to apex; traces of an oblique brown postmedial line from submedian fold to inner margin; postmedial area with slight whitish streaks in the interspaces between vein 4 and submedian fold; subterminal obliquely placed brown streaks above and below veins 6 and 3 and a slight brown lunule below vein 2; a terminal series of brown striæ; cilia white at base, brownish at tips. Hind wing white tinged with rufous; a fine brown terminal line; the underside with the costal area slightly irrorated with rufous.

Hab. Queensland, Peak Downs, 1 ♂, 1 ♀ type. *Exp.* 26 millim.

4282. **Namangana præacuta.**

Platyperigea præacuta, Smith, Trans. Am. Ent. Soc. xxi. p. 61, pl. iii. f. 6 (1894); Dyar, Cat. Lep. N. Am. p. 109.

♂. Head, thorax, and abdomen clothed with grey and black-brown scales. Fore wing brownish grey irrorated with black; subbasal line black, strongly excurved in cell and incurved below it, ending at vein 1; antemedial line strong, black, obliquely excurved; claviform represented by a slight oblique black mark; orbicular and

reniform large, defined by black, the former oblique, open above and its lower extremity produced to a point, the latter with brownish centre; a slight oblique medial brown shade from costa to median nervure; postmedial line black, strong at costa, bent outwards below costa, oblique to vein 6, then minutely waved, incurved below vein 5, some pale points beyond it on costa; traces of a pale subterminal line defined on inner side by an oblique black shade at

Fig. 154.—*Namangana præacuta*, ♂. ¾.

costa and with an oblique black bar from vein 2 to tornus, angled outwards at vein 7; a terminal series of small black lunules; cilia with grey line at base. Hind wing grey tinged with brown; the underside grey irrorated with pale brown, a faint brown discoidal spot and rather diffused postmedial line from costa to vein 3.

Hab. U.S.A., Colorado, Glenwood Springs, 1 ♂. *Exp.* 32 millim.

Sect. IV. Antennæ of male ciliated.

A. Palpi with the 3rd joint long and dilated at extremity.

4283. Namangana adela.

Spodoptera adela, Hmpsn. Ann. S. Afr. Mus. ii. p. 287 (1902).

♂. Head and thorax violaceous grey mixed with red-brown and dark brown; lower part of frons whitish with black lateral bars; tegulæ with the basal half mostly rufous and with black medial line.; abdomen whitish irrorated with fuscous and tinged with rufous at

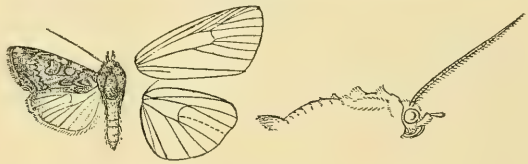


Fig. 155.—*Namangana adela*, ♂. ¾.

base and extremity. Fore wing ochreous suffused with red-brown and violaceous white, the veins with slight dark streaks; subbasal line double filled in with white, angled outwards in cell and ending at vein 1; antemedial line double filled in with white, oblique, waved, angled inwards on vein 1 and to inner margin; claviform large, defined by black, acute at extremity; orbicular and reniform with white annuli defined by black, the former oblique elliptical; postmedial line defined by white on outer side, double towards costa, bent outwards below costa, then dentate, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal

line indistinct, whitish, defined by brown on inner side, excurved below vein 7 and at middle; a fine dark terminal line; cilia fuscous with some white at tips. Hind wing white, the veins and terminal area suffused with reddish brown; a fine dark terminal line; cilia white with a brown line near base; the underside with the costal area and terminal area to vein 4 slightly tinged with pink and irrorated with brown.

Hab. Bechuanaland, N'Gami (*Lugard*), 1 ♂ type. *Exp.* 30 millim.

B. (*Namangana*). Palpi with the 3rd joint short and not dilated at extremity.

a. Fore wing with elongate V-shaped black marks on terminal area between veins 7 and 3 ..... *cashmirensi*

b. Fore wing without V-shaped black marks on terminal area.

a^1. Fore wing with large patches of black suffusion on costal half of medial area and on postmedial and terminal areas ..... *atrescens.*

b^1. Fore wing mostly suffused with black-brown except on terminal area ..... *canoa.*

c^1. Fore wing with wedge-shaped patch of black suffusion in and below cell to postmedial line ..... *atripars.*

d^1. Fore wing with the costal half suffused with black to postmedial line ..... *abalas.*

e^1. Fore wing without patches of blackish suffusion.

a^2. Fore wing with black streak in base of submedian fold to beyond antemedial line ..... *vulnerca.*

b^2. Fore wing with ochreous streak in submedian fold to postmedial line ..... *flavistriga.*

c^2. Fore wing without streak in submedian fold.

a^3. Hind wing white, the terminal area suffused with brown.

a^4. Fore wing with the claviform filled in with black, the reniform angled inwards on median nervure ..... *cretacea.*

b^4. Fore wing with the claviform not filled in with black, the reniform not angled inwards on median nervure.

a^5. Fore wing with the orbicular and reniform present.

a^6. Fore wing with the subterminal line angled outwards to termen at veins 4, 3 ..... *accurata.*

b^6. Fore wing with the subterminal line not angled outwards to termen at veins 4, 3 ... *morsa.*

c^6. Fore wing with the subterminal line absent *begallo.*

b^5. Fore wing with the orbicular and reniform absent ..... *egestis.*

b^3. Hind wing wholly suffused with brown, the base somewhat paler.

a^4. Hind wing suffused with pale ochreous brown ... *leucorena.*

b^4. Hind wing suffused with fuscous brown.

a^5. Fore wing with the reniform very large, white, elliptical ..... *albirena.*

b^5. Fore wing with the reniform lunulate with pure white annulus ..... *niveirena.*

c^5. Fore wing with the reniform constricted at middle.

a^6. Fore wing not irrorated with white.
a^7. Fore wing with the reniform slightly angled inwards on median nervure.
a^8. Fore wing with the cell filled in with blackish ..... *consors*.
b^8. Fore wing with the cell not filled in with blackish ..... *texana*.
b^7. Fore wing with the reniform not angled inwards on median nervure ..... *variata*.
b^6. Fore wing irrorated with white ..... *charada*.

4284. **Namangana cashmirensis.** (Plate CXXXVI. fig. 32.)

Calophasia cashmirensis, Moore, P. Z. S. 1881, p. 358; Hmpsn. Moths Ind. ii. p. 284.

♂. Head and thorax ochreous white tinged with red-brown; sides of palpi and frons fuscous; abdomen ochreous white with fine brown segmental rings, the basal crest blackish, the ventral surface suffused with brown. Fore wing ochreous white slightly irrorated with red-brown, the costal area except at base and the cell suffused with red-brown and thickly irrorated with fuscous; subbasal line double, brown, from costa to vein 1, with a slight black spot beyond its lower extremity; two slight brown streaks above base of inner margin; a black spot below median nervure before the antemedial line, which is double, oblique and slightly sinuous from costa to median nervure, then erect; orbicular and reniform with blackish centres and ochreous-white annuli defined by blackish, the former round, the latter a narrow lunule; a strong rather diffused dark brown medial line oblique from costa to median nervure, then sinuous and incurved in submedian interspace; postmedial line obsolete on costal half, below angle of cell double, the outer line indistinct, incurved, waved; elongate V-shaped dark subterminal marks above veins 5, 4, 3 and slight marks below veins 3 and 2; a wedge-shape terminal mark beyond the mark above vein 5; a terminal series of small black spots and a semicircular blackish patch at tornus; cilia chequered ochreous white and fuscous. Hind wing ochreous white, the veins and terminal half slightly tinged with brown; a terminal series of slight dark lunules; cilia white slightly mixed with brown; the underside white, the costal area slightly irrorated with brown.

♀. Much browner; hind wing wholly suffused with brown.

Hab. Kashmir: Punjab, Kulu, Sultanpur (*G. Young*), 1 ♂, Kangra (*Dudgeon*), 1 ♂; Travancore, Pirmád (*Mrs. Imray*), 2 ♀; Ceylon, Haldamulla (*Mackwood*), 1 ♂. *Exp.* 32 millim.

4285. **Namangana atrescens.** (Plate CXXXVII. fig. 1.)

Caradrina atrescens, Hmpsn. J. Bomb. Nat. Hist. Soc. xi. p. 444 (1897).

Head and thorax whitish tinged with brown and slightly irrorated with black, the tegulæ and front of thorax thickly irrorated with black; palpi black, white in front and at tips; antennæ ringed with black at base, tibiæ banded with fuscous,

the tarsi black ringed with white; abdomen whitish tinged with fuscous brown. Fore wing whitish tinged with ochreous; subbasal line represented by black spots on costa and below cell; the antemedial area with black patch on costa and diffused curved mark below cell; antemedial line black, rather diffused and interrupted, oblique, irregularly waved, with small black spot at costa and angled inwards to a black spot on vein 1; orbicular slightly defined by black on inner side and with quadrate black patch beyond it connected with a patch on costa; reniform only defined by two small black spots on its outer edge; postmedial line indistinct, with small black spot at costa, bent outwards below costa, then waved and with some whitish points beyond it on the veins, incurved below vein 4; postmedial area black with some white points on costa; subterminal line only defined by the contrast between the postmedial and terminal areas, excurved below vein 7, excurved and waved at middle and incurved at discal and submedian folds; the terminal area with blackish streaks on the veins and a blackish patch at discal fold; a terminal series of small black lunules; cilia chequered whitish and black. Hind wing whitish, the veins and terminal area broadly suffused with fuscous brown; cilia white with series of slight fuscous spots; the underside white with postmedial series of minute fuscous streaks on the veins, and fuscous suffusion on veins of terminal area from apex to vein 2.

Hab. Sikhim, 1800′ (*Dudgeon*), 1 ♂, 1 ♀ type. *Exp.* 40 millim.

*4286. ? Namangana canoa. (Plate CXXXVII. fig. 2.)

Cerma canoa Barnes, Can. Ent. xxxix. p. 11 (1907).

♂. Head and thorax grey mixed with darker grey and black-brown; abdomen grey suffused with fuscous. Fore wing grey mostly suffused with dark grey and black-brown; subbasal line represented by a white point on costa with some black scales on its inner side, the antemedial area with pale streaks below cell and above inner margin; antemedial line represented by pale marks on costa, in submedian fold and on inner margin, each defined by a dark shade on outer side; medial area with pale streaks on the veins; orbicular a minute white point; reniform with white annulus, small and narrow; postmedial line white, bent outwards below costa, excurved to vein 4, then incurved, some white points beyond it on costa: subterminal line whitish, excurved below vein 7 and at middle and angled inwards to near postmedial line at discal and submedian folds; terminal area pale greyish; a fine dark terminal line; cilia chequered grey and white. Hind wing fuscous brown with traces of a discoidal point and postmedial line; cilia whitish with a dark line through them; the underside whitish with distinct discoidal point and postmedial line.

Hab. U.S.A., Arizona, Redington. *Exp.* 24 millim. This species is unknown to me; figured from a drawing from type in Coll. W. Barnes.

4287. **Namangana atripars**, n. sp. (Plate CXXXVII. fig. 3.)

♀. Head and thorax rufous mixed with fuscous; tarsi fuscous with pale rings; abdomen red-brown. Fore wing rufous, the costal area suffused with fuscous leaving pale streaks on the veins, the cell and area below it to submedian fold and beyond it to postmedial line suffused with black and irrorated with white; subbasal and antemedial lines, claviform and orbicular absent; reniform a small round rufous spot at lower angle of cell with black point in centre; postmedial line blackish, oblique and slightly sinuous from below costa to vein 1; a diffused blackish subterminal line, arising from apex and almost obsolete on inner area; a terminal series of black striæ; cilia blackish with fine whitish lines at base and middle. Hind wing pale red-brown with fine dark terminal line; the underside pale reddish ochreous, the costal and terminal areas irrorated with red-brown.

Hab. C. Colony, Deelfontein (*Sloggett*), 1 ♀ type. *Exp.* 26 millim.

4288. **Namangana abalas.** (Plate CXXXVII. fig. 4.)

Crambodes abalas, Smith, J. N.Y. Ent. Soc. xiii. p. 205 (1905).

♂. Head and thorax black-brown mixed with whitish; tarsi fuscous ringed with whitish; abdomen whitish tinged with brown. Fore wing whitish largely suffused with rufous, the costal area to near apex, the cell and area just beyond and below its extremity suffused and irrorated with blackish, the veins streaked with black, the submedian interspace and a diffused oblique fascia from apex to end of cell whiter; antemedial line represented by obscure black points on the veins; orbicular an indistinct round whitish mark, the reniform a faint whitish bar; an indistinct oblique medial line from cell to inner margin; postmedial line indistinct, blackish, bent outwards below costa, then dentate and produced to short black streaks on the veins, incurved below vein 4, some whitish points beyond it on costa; a terminal series of small black lunules with white points between them at the veins; cilia blackish. Hind wing white; the terminal area slightly tinged with brown from apex to vein 2; a fine brown terminal line; cilia white mixed with brown towards apex; the underside with the costal area irrorated with brown.

Hab. U.S.A., Arizona, Yavapai Co, 1 ♂, Cochise Co. *Exp.* 30 millim.

4289. **Namangana vulnerea.** (Plate CXXXVII. fig. 5.)

Homohadena vulnerea, Grote, Can. Ent. xv. p. 29 (1883); Smith, Cat. Noct. N. Am. p. 157.

♀. Head and thorax grey-white mixed with brown and fuscous; frons with lateral black marks; tarsi fuscous with pale rings; abdomen whitish mixed with dark brown. Fore wing white thickly

irrorated with dark brown and fuscous and tinged with ochreous in discal and submedian folds, the veins slightly streaked with black; subbasal line represented by a slight oblique black striga from costa; a sinuous black streak in submedian fold to below origin of vein 2; antemedial line represented by a small spot on costa, then by a faint oblique minutely waved line; orbicular very small, white defined by black, oblique elliptical; reniform with faint ochreous white annulus slightly defined by black on inner side, a black streak in cell before and beyond the orbicular; postmedial line black slightly defined by whitish on outer side, bent outwards below costa, then minutely waved, excurved to vein 4, then oblique; subterminal line represented by a series of faint minute ochreous white spots with slight wedge-shaped black marks on their inner side, most distinct at middle; a terminal series of black points; cilia ochreous white and brown intersected with fuscous. Hind wing semihyaline white with postmedial series of minute black points on the veins, the veins of terminal area irrorated with black; cilia irrorated with black except towards tornus; the underside with the costal area irrorated with black, the postmedial series of points more prominent.

Hab. U.S.A., Arizona, Pima Co., Babaquivera Mts., 1 ♀. *Exp.* 34 millim.

*4290. Namangana flavistriga. (Plate CXXXVII. fig. 6.)

Perigea flavistriga, Smith, J. N.Y. Ent. Soc. xiii. p. 204 (1905).

♀. Head pale red-brown, darker on vertex; thorax blackish brown, tegulæ at base and tips and edges of patagia reddish; abdomen pale brown. Fore wing dark brown with blackish irroration; subbasal line represented by two black points on costa; a distinct yellowish streak in submedian fold from base to postmedial line; antemedial line hardly traceable except at costa and in submedian interspace where it is excurved; claviform absent; orbicular and reniform with yellowish annuli and rather pale centres, the former narrow and oblique; postmedial line double filled in with yellowish, the outer line indistinct, bent outwards below costa, then minutely waved, oblique below vein 4 and slightly angled inwards above vein 1; subterminal line represented by slight yellowish lunules defined on inner side by minute dentate blackish marks, somewhat excurved below vein 7 and at middle; terminal area slightly darker; a terminal series of black striæ. Hind wing brown, paler and yellowish towards base; an indistinct discoidal lunule; the underside yellowish tinged with fuscous, an indistinct discoidal lunule and postmedial line.

Hab. Canada, Alberta, Lethbridge (*Willing*). *Exp.* 34 millim. This species is unknown to me; figured from a drawing from type in Coll. J. B. Smith.

4291. Namangana cretacea.

Namangana cretacea, Staud. Stett. ent. Zeit. 1888, p. 28; Alph. Rom. Mém. ix. p. 216, pl. 8. f. 10; Staud. Cat. Lep. pal. p. 169.

♂. Head and thorax ochreous white, brown, and fuscous mixed; tegulæ with strong black line near base; prothoracic crest with two black points, metathoracic crest with four points; tarsi black ringed with white; abdomen ochreous white mixed with brown. Fore wing ochreous white tinged with brown and irrorated with fuscous; subbasal line represented by double black striæ from costa and cell; antemedial line black, waved; claviform narrow and

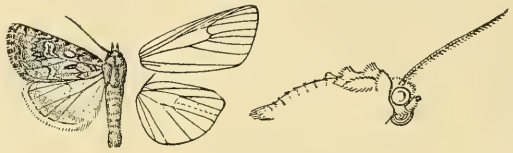


Fig. 156.—*Namangana cretacea*, ♂. ½.

acute at extremity, defined by black and almost entirely filled in with black; orbicular and reniform ochreous white defined by black, the former rather elongate elliptical, the latter narrow, angled inwards on median nervure and with slight brownish centre; a faint blackish medial bar from costa; postmedial line black, double at costa, bent outwards below costa, then dentate, excurved to vein 4, then incurved, some whitish points beyond it on costa; subterminal line whitish slightly defined on each side by dark suffusion, angled outwards at vein 7, excurved at middle, then incurved; a terminal series of slight black lunules; cilia ochreous white and brown with a slight brown line through them. Hind wing white tinged with brown, the veins and terminal area suffused with brown; cilia white; the underside white slightly irrorated with brown, a dark discoidal lunule, curved postmedial line from costa to vein 2, and faint diffused subterminal shade.

Hab. W. Turkestan, Turcomania, Tedschen Oasis, 1 ♂, Ferghana, Issyk Kul. *Exp.* 30 millim.

4292. Namangana accurata.

Mamestra accurata Christ. Hor. Ent. Soc. Ross. xvii. p. 110 (1882); id. Rom. Mém. ii. pl. 2. f. 11; Staud. Cat. Lep. pal. p. 169.

♂. Head and thorax ochreous white mixed with red-brown; palpi black at sides; tarsi black ringed with white; abdomen ochreous white tinged with red-brown. Fore wing ochreous white suffused and irrorated with red-brown; subbasal line indistinctly double and slightly waved, from costa to vein 1; antemedial line double, the outer line blackish and rather diffused, waved, angled inwards on vein 1; claviform a minute brownish mark; orbicular

and reniform small, ochreous white defined by brown and with slight brownish centres, the former round; a slight diffused medial brown line oblique from costa to lower angles of cell; postmedial line blackish slightly defined by white on outer side, bent outwards below costa, then dentate, excurved to vein 4, then oblique, some white points beyond it on costa; subterminal line white slightly defined by brown on inner side, angled outwards on veins 7, 6, 4, 3; a terminal series of slight black lunules; cilia brown and white with a dark line through them. Hind wing white, the veins slightly tinged with brown and with traces of a diffused brown subterminal shade; a fine terminal brown line; the underside with the costal area irrorated with brown, a blackish discoidal lunule, diffused curved postmedial line with minute dark streaks on the veins, and diffused subterminal shade from costa to vein 2.

♀. Hind wing with the terminal area more suffused with brown.

Hab. Armenia; W. Turkestan, Turcomania, 1 ♂, 1 ♀, Ferghana. *Exp.* 30 millim.

*4293. ? Namangana morsa.

Perigea morsa, Smith, Trans. Am. Ent. Soc. xxxiii. p. 141 (1907).

Head and thorax dull fuscous brown; tegulæ with black line near tips; abdomen somewhat paler. Fore wing dull fuscous brown; subbasal and antemedial lines double, punctiform, the latter oblique and irregular; claviform defined by some black scales; orbicular and reniform pale, undefined, the former nearly round, moderate, the latter slightly constricted at middle; postmedial line double, punctiform, bent outwards below costa, excurved to vein 4, then somewhat incurved; subterminal line angled inwards below costa and at discal and submedian folds, pale slightly defined on inner side by black; a terminal series of indistinct dark lunules. Hind wing of male whitish, the termen suffused with fuscous, of female uniformly suffused with fuscous; the underside whitish with some brown irroration, a discoidal spot and postmedial line.

Hab. U.S.A., Texas, Brownsville. *Exp.* 25–28 millim. This species is unknown to me.

*4294. ? Namangana begallo.

Catabena begallo, Barnes, Can. Ent. xxxvii. p. 193 (1905).

Head and thorax reddish brown suffused with fuscous; abdomen whitish. Fore wing reddish brown thickly irrorated and suffused with fuscous; subbasal and antemedial lines absent; orbicular a pale dot with black point in centre; reniform irrorated with white especially at lower extremity and defined by a few blackish scales; traces of a dentate postmedial line; subterminal line absent; a terminal series of black striæ with white points at the veins; cilia

slightly chequered with white. Hind wing white slightly tinged with fuscous towards termen especially in female; cilia white, the underside with the costal area irrorated with fuscous, a discoidal point, and in female traces of a postmedial line.

Hab. U.S.A., Arizona, Pima Co. *Exp.* 24 millim. This species is unknown to me.

4295. **Namangana egestis.** (Plate CXXXVII. fig. 7.)

Adipsophanes egestis, Smith, Trans. Am. Ent. Soc. xxi. p. 77, pl. v. f. 14 (1894); Dyar, Cat. Lep. N. Am. p. 108.

♀. Head and thorax brown mixed with grey, the scales tipped with grey; tarsi fuscous ringed with white; abdomen whitish suffused with brown. Fore wing reddish brown largely mixed with grey and fuscous, the medial area and veins slightly darker; antemedial line very indistinct, pale, angled outwards in interspaces and inwards on the veins; orbicular and reniform absent; postmedial line hardly traceable, oblique below vein 4; subterminal line absent; a terminal series of slight dark lunules. Hind wing white, the terminal area tinged with brown; a fine brown terminal line; the underside with the costal area and terminal area to vein 2 irrorated with brown.

Hab. U.S.A., Arizona, Huachuca Mts., 1 ♀, Prescott. *Exp.* 26 millim.

4296. **Namangana leucorena.** (Plate CXXXVII. fig. 8.)

Caradrina leucorena, Smith, Pr. U.S. Nat. Mus. xxii. p. 477 (1900); Dyar, Cat. Lep. N. Am. p. 111.

♂. Head and thorax grey mixed with pale reddish brown; abdomen whitish tinged with pale brown. Fore wing grey-white suffused with pale reddish brown; subbasal line represented by a slight dark striga from costa; antemedial line indistinct, dark, angled outwards at submedian fold and above inner margin and inwards on median nervure and vein 1; orbicular a faint dark point; reniform an ill-defined whitish bar with some dark scales on its inner side; postmedial line represented by a series of dark points on the veins with pale points beyond them, bent outwards below costa and oblique below vein 4; subterminal line defined by faint dark suffusion on inner side, excurved below vein 7 and at middle; a terminal series of minute dark lunules; cilia with a fine pale line at base. Hind wing whitish suffused with pale ochreous brown; cilia whitish; the underside white, the costal area slightly irrorated with brown, a terminal series of minute black points.

Hab. U.S.A., California, Los Angeles, Arizona, Phœnix, 1 ♂ co-type. *Exp.* 28–38 millim.

4297. **Namangana albirena**, n. sp. (Plate CXXXVII. fig. 9.)

Head and thorax reddish brown mixed with black and some grey; pectus, legs, and abdomen grey irrorated with brown, the tarsi black ringed with white. Fore wing purplish grey tinged with red-brown, the medial area red-brown except towards costa; subbasal line represented by double striæ from costa and a whitish spot below the cell with dentate black mark beyond it; antemedial line double, black filled in with white, obliquely curved; orbicular pale defined by black, small, rather oblique elliptical, touching the antemedial line; reniform yellowish white defined by black, very large and elliptical; postmedial line double, black filled in with white, bent outwards below costa, then minutely dentate and produced to black and white points on the veins, excurved to vein 5, then incurved, some white points beyond it on costa; subterminal line yellowish white defined on inner side by dark brown suffusion and with slight dentate blackish marks on inner side, excurved below vein 7 and at middle and incurved at discal and submedian folds, where it forms diffused yellowish-white marks; a terminal series of minute black points with yellowish-white points before them; cilia red-brown mixed with ochreous. Hind wing ochreous white suffused with red-brown, the terminal area darker: cilia yellowish white tinged with brown and with brown line at middle; the underside yellowish white thickly irrorated with brown, a slight discoidal spot, minutely waved postmedial line, and subterminal shade.

Hab. Queensland, Brisbane, Taylor Range (*Dodd*), 1 ♀ type. *Exp.* 26 millim. ♂ in Coll. Druce.

4298. **Namangana niveirena.** (Plate CXXXVII. fig. 10.)

Perigea niveirena, Harv. Can. Ent. viii. p. 53 (1876); Smith, Cat. Noct. N. Am. p. 154.

♀. Head and thorax dark brown mixed with grey; tarsi blackish ringed with white; abdomen grey suffused with brown. Fore wing grey suffused with brown and irrorated with black, the costal edge blackish; subbasal line black, angled outwards at median nervure and ending at submedian fold; antemedial line strong, black, rather oblique, waved; orbicular very indistinct, slightly defined by black, oblique elliptical; reniform narrow with brownish centre and white annulus defined by black; an indistinct medial line excurved to median nervure, then waved; postmedial line black, strongly bent outwards below costa, then dentate, incurved below vein 4, some white points beyond it on costa; subterminal line indistinct, whitish slightly defined on inner side by black and with some fuscous suffusion before it at costa, angled outwards at veins 7, 6, 4, 3, and inwards at discal and submedian folds; a terminal series of strong black lunules. Hind wing fuscous brown, greyish towards base; cilia with whitish line

at base and whitish tips; the underside whitish, the costal and terminal areas suffused with brown, the former irrorated with black and white scales, a small discoidal spot, curved diffused postmedial line, and terminal series of slight lunules.

Hab. Canada, Vancouver I.; U.S.A., California, 1 ♀ type. *Exp.* 38 millim.

4299. **Namangana consors.** (Plate CXXXVII. fig. 11.)

Perigea consors, Smith, Pr. U.S. Nat. Mus. xxii. p. 477 (1900); Dyar, Cat. Lep. N. Am. p. 112.

♀. Head and thorax pale red-brown mixed with greyish; palpi blackish at sides; pectus whitish; tarsi fuscous with pale rings; abdomen brownish ochreous irrorated with brown, the ventral area whitish. Fore wing reddish ochreous thickly irrorated with fuscous, the costal area to postmedial line paler; subbasal line represented by blackish points below costa and cell; antemedial line very indistinct, oblique, waved, strongly excurved above inner margin; claviform large, slightly defined by black; orbicular and reniform defined by black and with black before and between them in cell, the former oblique elliptical, open above, the latter with fuscous centre and angled inwards on median nervure; an indistinct oblique blackish medial line from cell to inner margin; postmedial line defined by reddish on outer side, oblique from costa to vein 6, angled inwards at discal fold and incurved below vein 4, some slight dark streaks beyond it on costa; subterminal line pale reddish defined on inner side by slight black spots forming small dentate marks above and below vein 5, angled outwards at vein 7 and excurved at middle, some blackish suffusion and slight streaks on the veins beyond it; a terminal series of black points; cilia with pale line at base. Hind wing whitish, the veins and terminal area suffused with brown; a fine waved dark terminal line; cilia white with a brownish line through them; the underside white irrorated with brown, a small discoidal spot, and slight sinuous postmedial line.

Hab. U.S.A., Arizona, Phœnix (*Barnes*), 1 ♀. *Exp.* 30 millim.

4300. **Namangana texana.** (Plate CXXXVII. fig. 12.)

Perigea texana, Smith, Pr. U.S. Nat. Mus. xxii. p. 476 (1900); Dyar, Cat. Lep. N. Am. p. 112.

♂. Head and thorax ochreous white mixed with reddish brown on head and tegulæ and fuscous on thorax; palpi with some black at sides; frons ochreous white below and with black bar above; tarsi fuscous with whitish rings; abdomen greyish ochreous dorsally suffused with fuscous brown. Fore wing greyish ochreous tinged with fuscous and irrorated with black, the postmedial area except at costa and apex paler, the veins with slight black streaks; subbasal line represented by black striæ from costa and cell and point

beyond it in cell; antemedial line black, angled outwards below costa, then oblique and waved to just below cell where it is strongly angled outwards, then strongly angled inwards on vein 1; claviform absent; orbicular and reniform with ochreous annuli strongly defined by black, the former round, the latter slightly angled inwards on median nervure; a black medial line diffused and oblique from costa to median nervure, angled inwards below the cell, then oblique to inner margin; postmedial line black, excurved below costa, slightly angled inwards at discal fold, excurved and minutely waved to vein 2, below which it is bent inwards, some white points beyond it on costa; subterminal line represented by slight ochreous-white marks, defined on inner side by small dentate black marks, larger below costa and at middle, angled outwards at vein 7 and excurved at middle; a terminal series of black points; cilia reddish brown at base with series of white points, yellowish white at tips. Hind wing white, the veins and terminal area broadly suffused with brown; cilia brownish at base, white at tips; the underside white, the costal and terminal areas irrorated with brown, a small black discoidal spot, and sinuous postmedial line.

Hab. U.S.A., Texas, Round Mt., 1 ♂ co-type. *Exp.* 32 millim.

4301. **Namangana variata.** (Plate CXXXVII. fig. 13.)

Tricholita variata, Schaus, Trans. Am. Ent. Soc. xxi. p. 231 (1894).
Meristis fea, Druce, Biol. Centr.-Am., Het. i. p. 279 (part.).

Head, thorax, and abdomen brown mixed with grey; tarsi with pale rings. Fore wing grey-brown with slight dark irroration; a faint waved subbasal line from costa to submedian fold; antemedial line dark, obliquely excurved from costa to just below cell, angled inwards on vein 1 and excurved above inner margin; orbicular faintly defined by brown, round; reniform defined by brown, with blackish spot in lower part and somewhat constricted at middle; a rather diffused medial line, oblique from costa to lower angle of cell, then incurved; postmedial line slightly bent outwards below costa, very slightly incurved at discal fold, excurved to vein 3, then incurved, some whitish points beyond it on costa; subterminal line indistinctly pale defined on inner side by a brown line, excurved below vein 7 and at middle; a fine dark terminal line, in male with white points at extremities of veins; cilia with a fine pale line at base. Hind wing whitish, the veins and terminal area suffused with brown, in female wholly suffused with brown; cilia yellowish white with a brownish line through them; the underside grey-white irrorated with fuscous, a blackish discoidal spot, and somewhat sinuous postmedial line.

Hab. Mexico, Jalapa (*Schaus*), 1 ♀; Guatemala, San Geronimo (*Champion*), 1 ♀, Godman-Salvin Coll; Costa Rica, San José. *Exp.* 34 millim. Type † in U.S. Nat. Mus.

4302. Namangana charada. (Plate CXXXVII. fig. 14.)

Perigea charada, Schaus, Pr. U.S. Nat. Mus. xxx. p. 100 (1906).

Head and thorax red-brown mixed with grey; tarsi with slight pale rings; abdomen grey-brown, whitish at base. Fore wing red-brown thickly irrorated with grey and fuscous, the veins slightly streaked with grey; subbasal line faint, double filled in with grey, from costa to vein 1; antemedial line double filled in with whitish, bent inwards at subcostal nervure, oblique to submedian fold, then inwardly oblique; orbicular and reniform with greyish annuli slightly defined by brown, the former small, irregularly rounded, the latter narrow, constricted at middle and slightly angled inwards on median nervure, connected with costa by an oblique whitish bar; postmedial line brown defined by whitish on outer side, excurved from just below costa to vein 4, then oblique; some white points beyond it on costa; subterminal line indistinct, pale, slightly defined by brown on inner side, excurved below vein 7 and at middle; a fine waved brown terminal line with dark points in the interspaces; cilia with a fine white line at base. Hind wing greyish suffused with brown; a fine waved brown terminal line; cilia white tinged with brown except at base; the underside grey-white with some dark irroration, the costal half tinged with rufous, a slight discoidal spot, curved postmedial line from costa to vein 4, and terminal series of slight lunules.

Hab. Mexico, Jalapa (*Schaus*), 1 ♀. *Exp.* 38 millim. Type † ♂ in U.S. Nat. Mus.

Genus CARBONA.

Type.
Carbona, Schaus, Pr. U.S. Nat. Mus. xxx. p. 102 (1906) ..... *obscura.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to vertex of head and moderately fringed with scales in front, the 3rd moderate, porrect; frons smooth; eyes large, round; antennæ of male ciliated; thorax clothed with scales and hair mixed, the pro- and metathorax with spreading crests; tibiæ moderately fringed with hair; abdomen with some rough hair at base but without crests. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4303. Carbona obscura.

Carbona obscura, Schaus, Pr. U.S. Nat. Mus. xxx. p. 102 (1906).

Head and tegulæ black-brown slightly mixed with grey, the tegulæ tipped with white; thorax greyish tinged with red-brown, the metathoracic crest large, black, with metallic scales in it; legs fuscous brown, the tarsi slightly ringed with whitish; abdomen dark greyish brown. Fore wing greyish suffused with red-brown, the inner area from beyond antemedial line suffused with black-

brown extending to cell and from lower angle of cell obliquely to termen below apex; subbasal line double, minutely waved, from costa to vein 1; antemedial line double towards costa, minutely waved, incurved in submedian interspace; orbicular and reniform defined by black-brown, the former small, round; an indistinct dark medial line excurved in cell, then incurved; postmedial line dark, slightly defined by greyish on outer side, double and filled in with greyish towards costa, bent outwards below costa, then minutely dentate and produced to slight grey streaks on the veins, excurved to vein 4, then incurved, the costa beyond it with some pale points with blackish

Fig. 157.—*Carbona obscura*, ♂. ½.

marks between them; subterminal line indistinct, greyish, angled outwards at veins 7 and 4, inwards in discal fold and bent outwards to tornus; a terminal series of white points at the extremities of the veins; cilia black-brown with a fine whitish line at base. Hind wing dark brown with a fine whitish line at base of cilia; the underside greyish brown, the costal area slightly irrorated with whitish, an obscure discoidal bar and diffused curved postmedial line.

Hab. S.E. Peru, La Oroya (*Ockenden*), 1 ♂, Carabaya, S. Domingo (*Ockenden*), 1 ♂; Brazil, Petropolis. *Exp.* 30 millim.

Genus **CINGALESA**.

Type.
Cingalesa, Hmpsn. Moths Ind. ii. p. 336 (1894) ..... *strigicosta*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to vertex of head and moderately scaled, the 3rd moderate; frons smooth; eyes large, round; antennæ of female minutely ciliated; thorax clothed almost entirely with scales, the pro- and metathorax with spreading crests; tibiæ moderately fringed with hair; abdomen with dorsal crests on basal segments. Fore wing with the apex rounded, the termen slightly excised below apex and excurved at middle; veins 3 and 5 from near angle of cell; 7, 8 and 10 stalked; 9 absent; 11 from cell. Hind wing with veins 3, 4 stalked; 5 obsolescent from middle of discocellulars; 6, 7 stalked; 8 anastomosing with the cell to near middle.

4304. Cingalesa strigicosta.

Microphysa strigicosta, Hmpsn. Ill. Het. B. M. ix. p. 100, pl. 162. f. 14 (1893); id. Moths Ind. ii. p. 337.

♀. Head, tegulæ, and prothoracic crest black mixed with some red-brown; thorax ochreous white; pectus and legs blackish, the tarsi ringed with white; abdomen ochreous suffused with brown, the crests blackish. Fore wing whitish suffused with olive ochreous

and irrorated with a few black scales; the costal edge black; a small black spot at base of costa; subbasal line represented by a black striga from costa and a few scales below the cell, the antemedial line by a black striga from costa, then by a few scales, excurved; a black mark on costa before the postmedial line which is

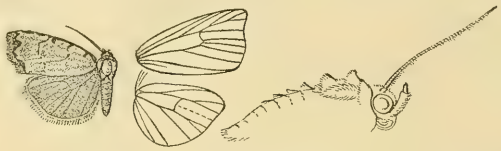


Fig. 158.—*Cingalesa strigicosta*, ♀. ⅔.

slight, black, slightly bent outwards below costa and incurved at discal fold, incurved below vein 4, some small white spots beyond it on costa; subterminal line indistinct, whitish, excurved below vein 7 and to termen at middle, leaving a semicircular black patch beyond it below apex and a black line towards tornus; a terminal series of whitish points; cilia black mixed with some grey. Hind wing greyish wholly suffused with fuscous black, the cilia with a slight pale line at base; the underside paler irrorated with fuscous brown, a dark discoidal striga and postmedial line.

Hab. Ceylon, Pundaloya (*Green*), 1 ♀ type. *Exp.* 20 millim.

Genus **NEOSTROTIA**, nov.

Type, *N. malonia*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching to middle of frons and broadly scaled, the 3rd short; frons smooth; eyes large, round; antennæ of male ciliated; thorax clothed chiefly with scales, the prothorax without crest, the metathorax with depressed crest; tibiæ moderately fringed with hair; abdomen without crests. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 7, 8, 9, 10 stalked; 11 from cell. Hind wing with veins 3, 4 stalked; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with the basal and terminal areas darker than the medial area ..... *nigripalpis.*

B. Fore wing with the basal and terminal areas not darker than the medial area ..... *malonia.*

4305. Neostrotia nigripalpis. (Plate CXXXVII. fig. 15.)

Thalpochares nigripalpi, Schaus, Trans. Am. Ent. Soc. xxx. p. 162 (1904).

♂. Head white; palpi and lower part of frons deep black; antennæ rufous; thorax yellow tinged with rufous and with a few dark scales; pectus except below wings and legs black, the tips of spurs, base of hind tibiæ and the tarsi white; abdomen rufous, yellowish white at base, the anal tuft and ventral surface black. Fore wing with the basal area fuscous brown shading to rufous, some whitish at base of inner margin, the medial area whitish suffused with yellow and irrorated with brown, the postmedial area

fuscous brown, the terminal area red-brown ; a slight dark discoidal spot ; postmedial line represented by a double series of small red-brown spots, obsolete towards costa and incurved below vein 4, some white points with black streaks between them beyond it on costa ; subterminal line almost obsolete towards costa, then white, excurved below vein 7, excurved and minutely dentate at middle and bent outwards to tornus ; a terminal series of black points with minute white points beyond them ; cilia fuscous. Hind wing yellowish white ; a blackish discoidal spot, slight postmedial line obsolete towards costa, indistinct subterminal diffused line and terminal series of black striæ with whitish striæ beyond them ; the underside faintly tinged with rufous and irrorated with dark brown, the postmedial line distinct and punctiform, a terminal series of small black lunules.

Hab. Brazil, Castro Paraña (*D. Jones*), 1 ♂. *Exp.* 24 millim.

*4306. Neostrotia malonia.

Eustrotia malonia, Schaus, J. N.Y. Ent. Soc. vi. p. 144 (1898).

♀. Head white ; palpi and frons black ; antennæ fuscous, white at base ; thorax white suffused with rufous ; tibiæ fuscous black ; tarsi pale rufous ; abdomen fuscous, whitish tinged with rufous at base and on ventral surface. Fore wing white suffused with rufous and slightly striated with fuscous ; a subbasal black spot on costa ; antemedial line double filled in with white, the inner line brown, the outer pale rufous with black spot at costa, curved and slightly waved, some whitish beyond it ; a slight blackish discoidal lunule ; a faint rufous line from lower angle of cell to inner margin ; postmedial line with triangular black spot on costa, bent outwards and almost obsolete below costa, then

Fig. 159.—*Neostrotia malonia*, ♀. ⅔.

formed by rufous lunules slightly defined by white on outer side, excurved to vein 4, then incurved, some white striæ beyond it from costa with small black spots between them ; subterminal line white, defined on inner side by blackish from costa to discal fold, slightly angled outwards at vein 7, then minutely dentate and bent outwards to tornus ; a terminal series of black striæ ; cilia chequered white and fuscous brown. Hind wing whitish suffused with brown ; a faint discoidal spot and curved postmedial line ; a terminal series of black striæ ; cilia chequered white and fuscous brown ; the underside white irrorated with black, the

costa and termen to vein 2 tinged with brown, a black discoidal spot and curved rather maculate postmedial line.

Hab. Brazil, São Paulo (*D. Jones*), type † ♀ in U.S. Nat. Mus. *Exp.* 26 millim.

Genus **NEOMONODES**, nov.

Type, *N. bertha.*

Proboscis aborted, minute; palpi upturned, the 2nd joint reaching vertex of head and slightly fringed with scales in front, the 3rd moderate; frons smooth; eyes large, round; antennæ of male ciliated with tuft of hair in front of basal joint; thorax clothed chiefly with scales, the pro- and metathorax with spreading crests; build slender; tibiæ moderately fringed with hair; abdomen with dorsal crests on basal segments. Fore wing with the apex rounded, the termen excised from vein 3 to tornus and not crenulate; vein 3 from before angle of cell; 5 from above angle; 6 from below upper angle; 7, 8, 9, stalked; 10, 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

*4307. Neomonodes bertha.

Eustrotia bertha, Schaus, J. N. Y. Ent. Soc. vi. p. 118 (1893).

♂. Head and tegulæ whitish suffused with red-brown; thorax ochreous white tinged with rufous; fore legs suffused with brown; abdomen ochreous. Fore wing with the basal half ochreous tinged with rufous, extending to end of cell and on medial area to submedian fold, the inner medial area and terminal area grey-brown with some white mixed, the costal edge brown; subbasal line represented by a slight very oblique brown striga from costa; antemedial line brown, interrupted below the cell, acutely angled outwards below costa and in cell and above and below vein 1 and inwards on median nervure and vein 1, with a brown streak from it to postmedial line above vein 1; two minute whitish points on discocellulars defined by fuscous; postmedial line indistinct, double, strongly bent outwards below costa, then minutely waved, excurved to vein 4, then oblique, filled in with white on inner area; a diffused oblique white band beyond it from vein 6 to submedian fold; subapical black streaks on veins 8 and 7; subterminal line white, arising from below apex and incurved below vein 3; the veins of terminal area slightly streaked with white except at apex; a fine blackish terminal line. Hind wing white, the apical area irrorated with red-brown, a slight discoidal point;

Fig. 160.—*Neomonodes bertha*, ♂. ½.

a brown terminal line; cilia white mixed with brown at base; the underside with the costal area irrorated with red-brown, a diffused waved medial line from costa to lower angle of cell and postmedial line from costa to vein 6.

Hab. Brazil, São Paulo (*D. Jones*), type † ♂ in U.S. Nat. Mus. *Exp.* 22 millim.

Genus **MICROMONODES**, nov.

Type, *M. guarama.*

Proboscis fully developed; palpi upturned, slender. the 2nd joint reaching to vertex of head and slightly fringed with scales in front, the 3rd rather long; frons smooth; eyes large, round; antennæ of male ciliated; thorax clothed chiefly with scales and without crests, or the metathorax with depressed crest; tibiæ slightly fringed with hair; build slender; abdomen without crests. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 7, 8, 9 stalked; 10, 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Hind wing with veins 3 4, stalked; metathorax with depressed crest.

*4308. Micromonodes mochensis.

Photedes mochensis, Schaus, Trans. Am. Ent. Soc. xxx. p. 157 (1904).

♀. Head and thorax whitish tinged with red-brown, the metathoracic crest black; palpi black-brown, the extremity of 2nd joint and the 3rd joint pale rufous with black points at tips; pectus and legs whitish tinged with rufous, the fore tibiæ blackish, the tarsi blackish ringed with white; abdomen red-brown with slight white segmental lines and white band at base of anal tuft, which is black, the ventral surface whitish at base. Fore wing red-brown with slight blackish irroration, the basal area whitish, the

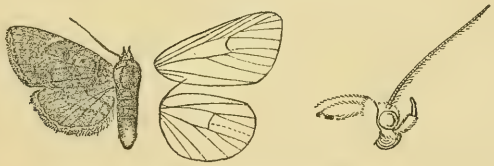


Fig. 161.—*Micromonodes mochensis*, ♀. $\frac{3}{2}$.

antemedial and terminal areas tinged with fuscous; subbasal line represented by a slight whitish striga from costa; antemedial line double, black filled in with whitish, inwardly oblique and almost straight; orbicular represented by a black point, the reniform by an elliptical black spot; a double rather diffused and slightly sinuous blackish medial line; postmedial line black defined by whitish on outer side, oblique from costa to vein 6, excurved to vein 5, then oblique and slightly sinuous, some whitish points

beyond it on costa on a diffused blackish patch; subterminal line very indistinct, pale, slightly angled outwards at vein 7 and excurved at middle; a terminal series of black points; cilia with fine pale line at base. Hind wing reddish brown; a faint dark discoidal spot; a sinuous postmedial line and fine terminal line; cilia rufous with a fine pale line at base; the underside whitish irrorated with black, the terminal half suffused with rufous, a black discoidal spot, curved postmedial line, and terminal series of points.

Hab. Mexico, Jalapa (*Schaus*), type † ♀ in U.S. Nat. Mus. *Exp.* 20 millim.

Sect. II. Hind wing with veins 3, 4 from cell; metathorax without crest.

A. Fore wing without black streak in submedian fold on medial area ..... *marita.*
B. Fore wing with black streak in submedian fold on medial area ..... *guarama.*

*4309. Micromonodes marita. (Plate CXXXVII. fig. 16.)

Photedes marita, Schaus, Trans. Am. Ent. Soc. xxx. p. 157 (1904).

♂. Head and thorax whitish suffused with red-brown and with a few dark brown scales; palpi whitish, blackish at sides except at tips; mid and hind tibiæ with blackish patches at sides at extremities; abdomen grey-white, dorsally suffused with brown, the anal tuft pale rufous. Fore wing whitish mostly suffused with red-brown, the inner area paler; subbasal line double, waved, from costa to submedian fold; antemedial line indistinctly double, slightly excurved below costa and inwards in cell, then excurved, oblique and obsolescent towards inner margin; orbicular represented by a faint oblique yellowish mark; reniform very narrow and indistinct, with brown centre and whitish annulus; postmedial line blackish defined by whitish on outer side, strongly bent outwards below costa, then very minutely waved, excurved to vein 4, then very oblique, some white points with brown streaks between them beyond it on costa; an oblique white fascia from apex to postmedial line defined below by a blackish streak; subterminal line white, angled outwards at vein 7, excurved at middle and forming a white patch at tornus; a terminal series of small black lunules slightly defined by whitish on inner side; cilia pale rufous. Hind wing whitish suffused with brown except on basal area; a slight dark discoidal spot; a fine brown terminal line; cilia whitish with a brown line through them; the underside whitish, the costal area and terminal area to vein 4 irrorated with brown, a blackish discoidal lunule, rather diffused waved postmedial line, angled inwards at vein 6 and incurved below vein 4, a terminal series of black lunules from apex to vein 2.

Hab. Brazil, São Paulo (*D. Jones*), type † ♂ in U.S. Nat. Mus. *Exp.* 22 millim.

*4310. Micromonodes guarama.

Thalpochares guarama, Schaus, Trans. Am. Ent. Soc. xxx. p. 162 (1904).

♀. Head and thorax pale ochreous slightly tinged with rufous and irrorated with brown; abdomen ochreous white. Fore wing pale ochreous tinged with rufous and slightly irrorated with dark brown; subbasal line slight, dark, waved, from costa to vein 1; antemedial line blackish, with diffused black mark at costa, oblique to median nervure, with two white points on it in submedian fold, excurved above inner margin, with a black streak in submedian fold from it to postmedial line; traces of a medial line oblique from costa to middle of discocellulars, then sinuous; postmedial line obsolescent towards costa, strongly bent outwards below costa, excurved to vein 5, then black defined by white on

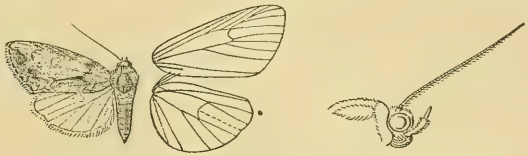


Fig. 162.—*Micromonodes guarama*, ♀. $\frac{3}{2}$.

outer side and slightly excurved at vein 1, some whitish points beyond it on costa; an oblique blackish fascia from termen below apex to postmedial line at vein 5 with whitish patch above it at apex and traces of a whitish subterminal line from it to inner margin with black patch before it at middle; a terminal series of black striæ; cilia ochreous white mixed with brown. Hind wing white slightly tinged with brown; a fine brown terminal line; the underside with the costal area tinged with ochreous and irrorated with brown, a blackish discoidal spot and indistinct diffused sinuous postmedial line.

Hab. Brazil, São Paulo (*D. Jones*), type † in U.S. Nat. Mus. *Exp.* 22 millim.

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British Museum (Natural History),
Cromwell Road,
London, S.W.
April 1st, 1909.

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